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Remarks
ON
THE MEDICAL ASPECTS OF THORACIC SURGERY.*

BY
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THORACIC surgery at the present time is a medical subject of absorbing interest. Although drainage of empyema is perhaps one of the earliest of surgical procedures, and although a few pioneer efforts, both experimental in animals and clinical in man, served to point the way, the real advances in thoracic surgery have occurred in the period of a generation—in fact, within this century. They have not, however, been slow in developing. Thoracic surgery has emerged from the tentative, experimental, and groping stage into one of well-established technique and of great achievement. Surgeons, physicians, radiologists, and anaesthetists may well be proud of the advances which their co-operation has achieved. It needs no great gifts of prophecy to forecast even greater triumphs in the future.

APPLICATION OF SURGERY TO THORACIC DISEASE.

The physician appeals to the surgeon for assistance when his own efforts have failed, or when he is almost helpless, often owing to the difficulties of access to the affected structure or organ. Medical failures are too often tragedies, leaving the patient maimed, suffering, and uneconomic. In no special department is this more true than in thoracic disease. The intrathoracic organs are literally of such vital importance that their disease or damage often results in severe and even dangerous consequences. Fortunately, as Meltzer pionted out, nature is generally lavish in providing "spares" or at any rate compensatory mechanisms.

It is perhaps not yet recognized as widely as it should be by practitioners or by patients, at least in Great Britain, how much help surgery can give in some of these grave intrathoracic conditions where medicine is impotent or confined to palliation. Thoracic surgery is now capable of yielding, and is indeed daily giving, results, without prohibitive risks, comparable in their usefulness with those of abdominal surgery.

Consider a case of chronic pulmonary abscess failing to drain effectively into a bronchus, accompanied by copious offensive sputum, and slowly progressing to incurable bronchiectasis, making the patient a misery to himself and a continual source of distress to his relatives. He who has seen such a patient restored to sound, robust health, and full working capacity, will surely approve, admire, and recommend this beneficent application of surgery.

A successful thoracoplasty in a case of pulmonary tuberculosis is another medico-surgical triumph which cannot fail to impress. To restore a patient suffering from chronic and progressive ill-health, and faced with the prospect of diminishing comfort and ever-increasing limitation to active and even full economic life, is a gratifying achievement which is daily becoming more common.

Such instances can be multiplied many times. They serve to emphasize the importance of a discussion of this kind, for the benefits of surgery should not now be withheld from suitable cases on the grounds that the procedures are experimental or associated with undue risk. They are now well established, and have universal or international sanction and approval, and a statistical warranty calculated to give confidence.

The medical aspects of this important development of the surgical art are very wide, and are difficult to define and to delimit. They involve:

1. The diagnosis of the condition requiring operation.
2. The assessment of the patient's suitability for operation, notably his capacity to bear successfully all that it may involve.
3. The choice of surgeon.
4. The discussion of the operative measures proposed and their adaptation to the condition present—for example, the question of operation in stages.
5. The preparation for operation and the after-care of the patient, both immediate and remote.
6. The decision as to the time for surgery.

DIAGNOSIS OF CONDITION.

The diagnosis of intrathoracic disease, especially of morbid conditions at the bases of the lungs or of the mediastinum, may be a matter of great difficulty. Fortunately these conditions rarely involve emergency operation. There is usually time for full investigation, and the experienced thoracic surgeon naturally demands that this should be done. Careful consideration of the history, symptoms, physical signs, and course of the patient's condition may suggest a diagnosis, but, where practicable, every investigation likely to help in establishing its accuracy should be undertaken.

The improvements in radiological technique have contributed in very large measure to the advances in the diagnosis and surgical treatment of intrathoracic disease. Complete radioscopic and radiographic investigations, including lateral and oblique views, are now essential in almost every case. The lateral and oblique radiograms, especially the former, may give crucial information. Investigation of the bronchial tree by means of lipiodol in suitable cases may determine the diagnosis and give extremely valuable information in regard to the suitability for operation. Bacteriological, haematological, and other clinical laboratory methods may contribute to the solution of the problem of diagnosis. Even exploratory procedures, varying from the puncture to artificial pneumothorax and exploratory thoracotomy, may be necessary. As a physician, I should like to deprecate exploratory puncture at random, where intrapulmonary suppuration is suspected. It may be the cause of disaster, if the pleura in the region of the puncture is not adherent. In case of any exploratory puncture or thoracotomy the surgeon should, if possible, have permission to proceed to full operative treatment and be prepared to do so. Bronchoscopy comes into the same category, since it may not only establish the diagnosis, but may be the means of operative cure.

ASSESSMENT OF THE PATIENT'S SUITABILITY AND CAPACITY.

This is a much more difficult matter, and depends upon less ponderable factors. Urologists have set physicians an excellent example and a high standard of attainment in their methods of investigation of renal function before operation. I think that there is scope for research in the measurement of respiratory efficiency. The estimation of "vital capacity" may be helpful. The normal is enormously greater than is necessary for the bare maintenance of life, the minimum being in effect the "tidal air" which is obviously enough to provide adequate respiratory exchange at rest, provided that there is sufficient lung area undamaged for aeration purposes. A very low vital capacity may be a bar to operation. At present we have to rely more upon a careful clinical review of the patient's general condition, taking into consideration factors like age, physique, temperament, blood pressure, and the general nutrition. The sedimentation rate of the erythrocytes may prove to be of some value in this connexion, but at present its significance is debatable. The ultimate decision rests rather upon "clinical instinct"—that is, an almost intuitive assessment of the patient's condition and capabilities. Personally, I now find myself advising surgical intervention in cases where a short time ago I should have hesitated. None the less some more explicit criteria are desirable.

CHOICE OF SURGEON.

A great responsibility rests upon the physician or the practitioner in choosing a surgeon. The more difficult operations in this field of surgery should be entrusted, in my opinion, to those with special experience. Time in operations involving extensive rib removal may be of vital importance. A few minutes may make the difference between success and failure. Moreover, there is more than

* Made to a joint meeting of the Sections of Surgery and Tuberculosis at the Annual Meeting of the British Medical Association, Winnipeg, 1930.

operative technique to be considered. There is the necessity for great judgement in deciding what should be done and how much should be attempted. Thoracic conditions often require several operations or several stages in one operative scheme. Fortunately, there are now teaching centres in almost, if not all, English-speaking countries where thoracic surgery of the best type can be studied and where experience can be gained.

The physician recommending surgery is well advised to observe the surgeon at work in order to learn what the procedure he advises may entail. It is also desirable—indeed necessary—that the surgeon should have a good and practical knowledge of the medical aspects of thoracic disease, including the significance of physical signs. I am bound to say that every thoracic surgeon I have known has amply fulfilled this condition. It is always stimulating and instructive to discuss cases with them, since they have the experience of what has been so aptly called "the pathology of the living."

This question raises an interesting speculation whether this branch of medical work is likely to develop a type of specialist worker who will deal with thoracic disease from all aspects—that is, both diagnostic and therapeutic—by regimen, medicine, or operation. Some of the pioneers in this field have conformed to these conditions, like Brauer, Saugman, Gravesen, and Morriston Davies, and their names stand high in the roll of achievement. It is probable that the developments will vary in different countries. In England, at any rate at the present time, properly organized and co-ordinated team work seems likely to give the best results.

Discussion of Measures Proposed.

The physician discusses with the surgeon the morbid conditions and the measures most likely to yield good and permanent results. Although the surgeon from his experience is the best judge of what he is likely to achieve, yet the physician knows what he desires to attain, and free and friendly discussion and criticism have in my experience been very helpful. The physician has to bear the responsibility of advising operation, and he should take his share in deciding what is to be done. At the same time it is obvious that the ultimate decisions may be influenced by what is found at the operation, and the surgeon should have a free hand to proceed as may seem best.

Preparation for Operation and After-care.

It is important to recognize that in thoracic surgery the patient should be in the optimum condition. Some days occupied in preparation may be time well spent, and practitioners should recognize this and warn patients and their friends when advising recourse to surgery. Similarly, skilled after-care and nursing are of the utmost importance, and may contribute not only to the comfort of the patient but also to the success of the result, particularly in conditions like thoracoplasty, abscess, and empyema. These are matters of which the physician and the practitioner should have knowledge, though the responsibility is the surgeon's. Strict attention to details may be of the utmost importance to the patient.

Time for Surgical Intervention.

Emergency operations are few, and are confined practically to:

(*a*) Relief of positive pressure in valvular pneumothorax.

(*b*) Immediate artificial pneumothorax in cases of severe or recurrent haemoptysis.

(*c*) Partial aspiration of a large effusion causing oedema of the opposite lung or dangerous mediastinal displacement, impeding its respiratory activity.

(*d*) Aspiration of empyema in a seriously ill patient, as a preliminary to effective drainage.

(*e*) Tracheotomy in bilateral abductor paralysis from pressure on both recurrent laryngeal nerves.

On this occasion I can only refer briefly to the time when the surgeon should be invited to help in medical diseases of the thoracic organs. In regard to pulmonary tuberculosis, artificial pneumothorax has established itself as a therapeutic method of the highest importance, and the indications are well recognized. Where this fails, or is impracticable, the question of the cause of failure has to be considered—local adhesion, large apical cavities, or general adhesion.

I have an open mind on the subject of cutting adhesions; I hope that the more recent methods may render this procedure of greater usefulness. Except in very small and localized adhesions I am somewhat chary of its employment. Apicolysis, in my experience, has been disappointing, but I still hope that some improved method may yet be evolved, since the principle seems to be attractive and admirably adapted to the purpose in view. Thoracoplasty in its modern forms has proved so valuable that it should always be considered in cases suitable for artificial pneumothorax when that form of treatment has proved impracticable. The contraindications, however, are more definite and more emphatic than those of artificial pneumothorax.

Phrenic evulsion is proving of great value, especially in preparation for, and in addition to, artificial pneumothorax in some cases where this procedure by itself is unsatisfactory. I find it useful in some patients with unilateral disease where the localization is predominantly basal, though it is less often completely successful than might be expected.

In abscess of the lung I wait till the abscess is definitely localized and then, if rupture does not occur, I call in the surgeon. If rupture occurs, I try medical treatment, but if in six weeks it is clear that complete healing is not likely to occur, or if there are recrudescences of fever or expectoration, I recommend surgery. A chronic abscess involves serious risks, notably those of secondary bronchiectasis, of cerebral abscess, and of progressive ill-health. The longer operation is postponed the greater the risks. I have been much impressed with phrenic evulsion as a means of effecting complete cure after thoracotomy and drainage, if residual cough and sputum are present.

I have little experience of washing out the cavity through a bronchoscope, and I favour thoracotomy where possible.

Bronchiectasis is a depressing and disappointing problem just now, both medically and surgically. I hope that more may be done in the future to prevent it, since at present I am not too sanguine as to surgical procedures in this condition when it is fully established. Phrenic evulsion in the early stage of unilateral cases certainly seems of value, and, if this fails, artificial pneumothorax or thoracoplasty is worth a trial. Lobectomy seems to offer the greatest promise, but its risks are still serious.

In malignant disease lobectomy is giving encouraging results in a small proportion of cases where the growth is localized in the lung parenchyma away from the hilum. This should stimulate us to earlier diagnosis in these cases. Improved means of applying radium may also shed more light on this dark corner of our work.

Of empyema I should hesitate to speak were it not that the work of the American Empyema Commission does not even yet seem to have received general recognition, either by surgeons or by physicians. Too early drainage of a streptococcal effusion leads usually to tragedy, which still too often occurs. It cannot be too strongly affirmed that such an effusion should not be drained until frank pus is obtained on aspiration. On the other hand, chronic empyema resulting from delayed or ineffective drainage is a serious reflection on medicine and surgery alike, and should be a rarity, which unfortunately it is not.

Conclusion.

In conclusion, I venture to hope that the present discussion will do much to stimulate a wider recognition of the achievements of thoracic surgery and of its benefits, but do nothing to stereotype surgical procedure or technique. There is always scope for advance. The surgeon is sometimes satisfied—the physician never. We look to the surgeons to give us more and more effective help, and, judged by the rapid progress of the last ten years, I feel sure that the future is very hopeful.

RADIUM IN CANCER THERAPY.*

BY

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THE decade just passed, during which radium has come into a prominent position, has been an extremely active and interesting one in the cancer field. This has been due, in part at least, to the fact that radium and its allied physical agent, the *x* ray, produce rapidly and readily demonstrable effects on neoplastic tissue. Cancer investigators have not previously had such a stimulus. In spite of the amount of investigation carried on for generations, improvement in cancer therapy was dependent almost entirely on technical surgical advances. Flurries of excitement have continued to centre transiently about alleged curative agents, usually of the constitutional type, but always with the same final result. The experience with radium and *x* rays, on the other hand, has been one of increasing confidence over a period of years. New tissue changes have been produced, the study of which continues to throw light on the intricate and complicated reactions, both histological and biological, within that maze of allied diseases covered by the term "cancer." Since most of the material for investigation has come through the treatment of patients, scientific investigators have been brought out from the dark recesses of the laboratory, and nearer, both figuratively and literally, to the practical clinical problems of cancer therapy. Even though the period of radium usage has been short, a great deal has been accomplished in very orderly sequence. The beginnings were made with small supplies of radium salt (frequently more of mesothorium than radium), meagre physical data, and no single treatment factor standardized. An empirical technique was established largely by application of the law of trial and error. Filtered applicators for surface use and for introduction within body cavities were developed. The need for guidance by the physicist was recognized in this formative period, and that assistance has been most generously given. Fortunately for the general problem the physicist's contributions, although becoming increasingly complicated, have nevertheless remained extremely practical. A serious effort has been made to meet the clinical necessities.

As standards of filter and dosage became established for surface contact applications it was evident from both clinical and histological observations that greater quantitative effect at depth was essential. For superficial lesions this was obtained by increasing the distance between the source of energy and the treated part, and by increasing correspondingly the quantity of energy delivered, according to the rule of the inverse square law. The quantities of radium available for use in most clinics at that time, however, were not sufficient to produce any marked effects at depth in bulky tumours of adult type or fully differentiated growth histologically.

In 1911 Stevenson of Dublin introduced an entirely different principle of radium therapy—one which has contributed largely toward the control of cancer as a local process since that time. By introducing a Dominici tube containing radium salt through a surgical incision as nearly as possible at the central point of the tumour, he initiated the principle of interstitial irradiation. The method was sound both physically and economically. Technical improvement in the method, designed to accomplish interstitial irradiation with a minimum of surgical trauma, found expressions in various ways. For the many small radium supplies the radium element needle of varying strength, size, and filter was the most practical solution. In some clinics, particularly on the Continent and notably at the Curie Institute in Paris, a larger type of needle with heavier filter and low radium salt content to permit of prolonged irradiation was preferred.

In America the clinics with sufficient radium supply to permit of a radium emanation collecting plant followed the suggestion made by Duane and initiated by Janeway at the Memorial Hospital in 1916—namely, the interstitial implantation of glass capillary seeds containing radon. The practical collection and preparation of these seeds was made possible by the work of Failla,[1] who in 1924 replaced the unfiltered radon seeds by substituting a gold capillary tube. The filtered radon seed thus produced (0.3 mm. wall thickness of gold) had all the advantages claimed for the filtered radium element needles in addition to the extremely practical advantage of a wider range of applicability. It is the opinion of those who have had experience in the use of filtered radon seeds that they offer several advantages over element needles. The radon content of the individual seed may be varied to meet the peculiar requirements of the individual case. It can be inserted in many locations where element needles could not be retained with sufficient accuracy to permit of the desired prolonged irradiation. The accuracy of distribution in irregular tumour-bearing areas is greater than with the larger needles. The trauma of introduction is less on account of their smaller size. Since they are left *in situ* the trauma of withdrawal is eliminated. Their reaction as a foreign body is negligible. The period of active irradiation—approximately a fortnight—is sufficiently prolonged on the basis of our present conception of the efficiency of continuous irradiation. The advantages in conjunction with operative surgery and primary wound closure are obvious, since the seeds do not have to be removed.

With means available for more uniform and more intensive irradiation, the earlier influence of *x*-ray experience began to wane. The skin erythema, which had come to be regarded as an evidence of maximum irradiation intensity consistent with preservation of the normal tissues, has gradually assumed the status of a unit of radiation. Over a period of years there has been a gradual trend away from the skin erythema as a dosage limitation. It has come to be a measure of quantity provided only that the factors of the exposure are known.

The steady increase in the relative quantities of irradiation employed has been accompanied and encouraged by the improved clinical results. These advances must, of course, be shared with improvements in the quality of radiation used as well as the factors of time (period of exposure) and distance between the source of radiant energy and the part treated.

In more recent years the intensive histological study of tumour tissue before and after irradiation has contributed largely towards the advancement of radiation therapy. From the beginning, very definite changes were noted, but these centred mainly about effects on blood supply and the supporting structure of the neoplasm. The observations were sufficient to give some conception of the growth restraint produced. They explained the variation in response between widely differing types of tumours. They did not, however, explain the variations in response to comparable quantities of radiation in tumours of the same histological types. It remained for further studies in cellular pathology to clarify this.

Broder's work on the relative degrees of cellular differentiation in tumours of the same clinical and histological group not only explained the reason for many surgical failures, but incidentally many unusual reactions to radiation as well. While the histological grading of tumours on the basis of relative degrees of cellular differentiation must vary in different clinics, it is nevertheless of considerable practical assistance. Each group of workers must have its own conception of what is meant by a certain grade: one shades into the other. It is a piece of work which is scarcely capable of translation exactly from one clinic to another. Nevertheless, the principle is the same, and the differences in relative appraisal are not great. Information of this kind guides the clinician in determining the general character of the treatment to be given. Surgery is more apt to be resorted to in the fully differentiated tumour and avoided in the undifferentiated. The relative intensity of irradiation required varies inversely. The possibility or probability of metastases to be anticipated, and the ultimate prognosis, are judged to a considerable degree on the same basis.

The intensive histological study stimulated by radiation changes has made other contributions in the field of tumour pathology. New types, definite clinical entities,

* A paper read in the Section of Radiology at the Annual Meeting of the British Medical Association, Winnipeg, 1930.

have been recognized. The transitional cell carcinoma which Ewing[2] has described (and the lympho-epithelioma of Schmincke[3] and Regaud[4]) was formerly grouped with epidermoid carcinoma in general, or occasionally classed as a reticulum cell sarcoma until its peculiar radio-sensitivity resulted in its recognition as a type of epithelial tumour distinct both histologically and clinically. Endothelial myeloma of bone—Ewing's tumour—was recognized in the same way after the study of a bone tumour which showed a peculiarly rapid regression, followed by regeneration of bone after moderate external radiation. The large and varied group of soft part tumours of connective tissue origin formally passed over as fibrosarcomas, or spindle-cell sarcomas, is much better understood, owing to careful histological study in conjunction with irradiation. They present a wide variation in cellular structure, and a corresponding variation in radio-sensitivity. All gradations in relative radio-sensitivity and radio-resistance are recognized, and must be used as a guide in selection of type and intensity of treatment. The origin of the majority of this group of tumours from the nerve sheath has been one of the notable contributions of the study.

With the accumulation of reasonably accurate and suggestive information about radio-sensitivity from histological study and clinical observations it was natural to inquire further into the factors of quality and intensity of radiation necessary to produce the desired changes.

It is true that some of the most spectacular early results in radiation therapy were obtained by irradiation of low intensity with radium or x rays, and in such unstable tumours as lymphosarcoma and teratomas of the testis or ovary. The most impressive histological changes, however, were in the more adult types of growth, and in order to produce these changes interstitial irradiation with radium or radon was the agent used. When external radiation effects were studied, there appeared to be some difference in the reaction to comparable quantities of radium and x-radiation. The fragments of evidence available suggested the possibility of more desirable effects from external irradiation if radium in sufficient quantity was employed.

Observations at clinics, such as Kelly and Burnam's in Baltimore, and the Memorial Hospital, where radon packs have been employed for several years, lent support to this view. Regaud's[4] method of prolonged distance radiation of low intensity also favoured radium as superior on account of the shorter wave-length of gamma radiation. Economic factors have, unfortunately, made it impossible to provide a sufficient number of large radium element packs, in order that adequate external distance radiation may be carried on without regard for the expenditure of energy or funds in large numbers of patients.

In those instances where adequate quantitative external radium radiation of maximum intensity has been possible, there is no doubt in the minds of the clinical observers of the superiority of radium over the most efficient x-radiation available to date. This has been the experience of the Memorial Hospital staff during fifteen years' use of a large radon pack, an experience decidedly strengthened during the past three and a half years with a 4-gram radium element pack. The total time of exposure undoubtedly contributed something toward this balance in favour of radium, but beyond this the main factor lies in the difference in *quality* of the radiation employed. When the economic difficulties have been overcome, or when shorter wave-lengths of x rays equalling the gamma rays of radium in quality are produced for practical use, a tremendous improvement in practical radiation therapy will result. The possibilities attendant upon total quantity per individual case, optimum period of total exposure, distance from source of energy to treated surface, and daily ratio of delivery of the radiation have not as yet been touched.

It is only in this one field of external distance radiation that there has been any appreciable overlapping of radium and x rays. Unfortunately, the number of cancer sufferers who have had the advantage of a superior quality of radiation, made possible by the extravagant use of large quantities of radium, represents only a negligible percentage of cancer patients in general. In large measure the immediate advantages of this form of radium usage are academic rather than real. The experience, however, points the way to more efficient radiation for the future. It is hoped that means will be found to provide large quantities of radium for more general use. It is hoped, also, that the experience already accumulated in favour of shorter wave-length gamma radiation will stimulate the engineers engaged in x-ray research and manufacture to provide equipment for x-radiation which will approach in quality the gamma rays of radium. All of the available radium is needed for the type of application to which it is physically best adapted—namely, for interstitial implantation, and for use in various applicators within body cavities. X-radiation should be the agent for external long-distance application—as it now is—but it ought to be of greater efficiency.

Viewed in this light it is apparent that there is very little practical overstepping or duplication in the fields of radium and x rays; the two forms of radiant energy are very similar physically except for a difference in quality. The character of the source of that energy in each instance governs the adaptability. Radium is an agent for use over or within localized tumour-bearing areas; x rays are for use over large surfaces. The two agents are complementary and not competitive. Further, there is evidence in favour of the combined use of these two agents beyond that of simple physical adaptability. Clinical and histological observations have been made on the difference in reaction with comparable quantities of the two types of radiation. Clinical observations have been made on the improved therapeutic reactions where the two have been combined. The experimental work of Quimby and Pack[5] has shown that when the two types of radiation are employed together and in equal quantitative ratio, the skin tolerance, as judged by threshold erythema, is increased by 20 per cent. or more.

It is only recently that serious consideration has been given to the accurate study of the quantities of radiation delivered within the tumour-bearing area necessary to produce complete regression of tumour tissue. Accuracy and standardization at every turn is essential if we are to develop a technique and dosage which may be depended upon to control a given type of growth and with a minimum of damage to adjacent normal structures. Preliminary dosage was of necessity empiric. Many factors enter into every dosage computation: the character and quantity of energy in the applicator employed; the time of exposure; the filter; the distance from source to area treated; the relative distance of points on the periphery of the tumour from the radiation source; the character of the tumour bed; the type of tumour and its degree of relative cellular differentiation.

With variations in each of the factors it was evident that any efforts toward greater accuracy and standardization must begin with one only. At the Memorial Hospital, Martin and Quimby[6] undertook a study of the quantity of radiation necessary to produce complete regression of various types of epidermoid carcinoma. A series of cases of intra-oral epidermoid carcinoma, in which complete regression of growth had been produced, was selected. The histology of the growths was carefully re-checked for type and relative degree of radio-sensitivity; the size of primary growth and metastatic nodes, if any, and the relative relationship of one to the other were noted. The component parts of the radiation dose—x-radiation, external radium, and interstitial radon—were calculated physically in terms of threshold skin erythema doses within the tumour-bearing area. In order to do this, for irregular-shaped growths particularly, it was necessary to translate the volumes into spheres or a series of smaller spheres, depending upon the shape of the growth, to get the dosage intensity at the most remote point of the tumour. The intensity recorded was the minimum intensity at this most remote point. Obviously a considerable portion of the growth received a good deal more than the recorded dose. From a study of this series of cases it was found that an intensity of seven to ten skin erythema doses at all points within the tumour-bearing area was necessary to produce complete regression

of adult epidermoid carcinoma. Growths showing a lesser degree of differentiation, such as transitional cell carcinoma and lympho-epithelioma, required a much lesser intensity —three to five skin erythemas.

The tendency in these doses, selected empirically and on an experience basis only, was to overdose the smaller growth and to underdose the larger. When a series of failures were measured in the same way, the reason for failure, in most instances, was only too apparent. The failure to provide dosage of sufficient intensity in the more bulky growths or in outlying areas accounted for most of the losses. The next step was the application of the data thus obtained to the treatment of cases. A series of cases of varied histological type were treated by calculating the dosage to begin with in terms of a certain number of skin erythema doses. This intensity was determined on the basis of the histology and the experience gained from the studied series. The method of delivery of this dosage was directed by the physicist on the most economic basis—*x* rays, radium externally, or by interstitial implantation. The results in this series corresponded with the findings in the cases studied in retrospect. It was found possible to depend on the result of treating a given area by this means of dosage calculation, providing the measurements and clinical evaluation were correct and the technique of treatment, especially radon implantation, was accurate. It might well be added that control of local infection on ulcerating surfaces is essential if this or any other type of irradiation therapy is to be counted upon. Doses for these cases in the last series, determined empirically and on an experience basis, did not vary more than 10 per cent. from the doses found necessary on the basis of measurement and physical and mathematical calculation.

The work has demonstrated very conclusively that adult type epidermoid carcinoma requires seven to ten erythema doses throughout the tumour in order to ensure its complete control, and that the undifferentiated types require at least one-half of this intensity. This is of the utmost practical importance. It not only explains the failures in bulky growths of this type where interstitial radiation was used, but too sparingly, but it indicates the futility of expecting complete control of epidermoid carcinoma by external irradiation alone in all except the most anaplastic growths at least, with the present facilities and methods for external irradiation.

The maximum dosage that can be delivered by external radiation within the oral cavity during a two- or three-week interval with our present equipment, either *x*-ray or radium, and consistent with the tolerance of the patient, is, at most, three skin erythemas of the intensities to which reference has been made. Very few of the epidermoid carcinomas fall in the group sufficiently radio-sensitive as to be completely cleared up by three erythemas. Consequently, interstitial implantation in some form is imperative if clinical cure is to be accomplished by irradiation.

With such data available it is unfortunate to see so many radiologists continuing to treat epidermoid carcinoma of the mucous membranes—the most common type of epithelial tumour—with *x* rays alone or, worse, with *x* rays and small plaques of radium on the surface.

The most effective treatment of cancer by radiation methods is too complicated a problem for the radiologist to shoulder alone. The same is true of the relationship of the clinician to the general management of the cancer patient. The assistance of the pathologist and physicist is necessary in determining the treatment rather than when the therapeutic procedure, whatever it may be, has been carried out. The problem is one for group study throughout. The best interests of the patient are served where the surgeon, working in co-operation with the pathologist and physicist, is thoroughly familiar with radiation, and thus combines the necessary operative surgery with the radiation therapy. A more orderly and conservative co-ordination is thus attained than by transferring the patient from one department to another. If this is not possible, there should at least be the maximum of contact and co-operation between surgeon and radiologist. The majority of cancer cases require in their total round of treatment, surgery, radium, and *x*-radiation. The more closely this is correlated the better.

With the information—clinical, physical, and histological —accumulated to date to guide us, it seems proper to inquire into its practical application in radium therapy. At least, the limitations of radium application are better understood. From a physical standpoint the intensity of irradiation is limited by tissue necrosis; as a cauterizing agent radium is not justifiable. Technically, the anatomical and physiological problems which limit operative surgery apply also in large measure to radium. Damage to large blood vessels and nerves must be avoided. In the upper abdomen, physiological problems attendant upon intensive local irradiation require study before anything may be hoped for through the combination of operative surgery and direct radium radiation. In spite of the benefits to be derived from radium therapy, it must not be forgotten that it is a local agent. The constitutional character of the later stages of cancer limits its use. For the most part, palliation in such cases is a medical and an *x*-ray problem.

In the major groups of neoplastic diseases the specific value of radium varies widely, and its usefulness is dependent upon many factors. Distinction must be made between efforts at cure and palliative relief only. If a reasonable hope for clinical cure can be entertained, the maximum of intensity, even though painful for a period, is justifiable and desirable. If palliation only is the object, the patient's comfort from day to day demands first consideration, and the type and intensity of irradiation should be governed accordingly. Radium may represent the sole therapeutic agent in certain instances, or it may be only an associated aid in others. Even within the individual groups the adaptability varies with the degree of growth advancement and the accumulated experience of radio-sensitivity or radio-resistance.

The distinction between relative radio-sensitivity and curability should be clearly understood. The most radio-sensitive tumours are those showing the minimum of cellular differentiation: they melt away rapidly under heavy or even moderate external irradiation. They also are of the type which disseminate early, widely, and usually through both lymphatics and blood stream. While the local process may be readily controlled, the tendency to generalization is such that the percentage of ultimate curability is very low. It is also of interest that subsequent and repeated metastases show a progressive lessening in the degree of response to irradiation. The patient's general physical resistance is of course deteriorated, but, added to this, the later metastatic processes show a tendency toward differentiation and are hence more radio-resistant. While the primary, fully differentiated epidermoid carcinoma is most difficult of all epidermoids to control, the result, once attained, is assured of a far greater permanence than in the more radio-sensitive undifferentiated types. Real curability is greater in the more radio-resistant types.

Rules for guidance in making the finer distinctions in choice of therapeutic procedures cannot be laid down. Appraisal of the many factors entering into the decision is, in the final analysis, a matter of experience, preferably co-operative group experience. Whether that group represents a special clinic or simply a cancer service within a larger organization depends upon the local and individual circumstances.

Skin cancer, unless extremely advanced or altered in its tumour bed by repeated recurrences, is by choice a radium problem. In all except the most superficial lesions, heavily filtered radium at distances of one to three centimetres gives best results. The wider zone of tissue radiated prevents recurrences at the border. The penetration at depth is greater; the scar is much better because of the lesser amount of fibrosis. It is more adaptable to localized application than *x* rays, and superior to thermic or electro-cauterization because of the wider zone of tumour bed affected.

With carcinoma involving the mucous membrane of the mouth, nose, and throat, the problem is much more complicated. The growths are predominantly epidermoid carcinoma—a metastasizing tumour involving chiefly cervical nodes. A variety of anatomical structures may become involved. Infection may play a major part by

discounting the normal reaction to irradiation, and by contributing to secondary necrosis of tissue. Problems of surgical drainage arise. Invasion of bone or cartilage by tumour tissue or infection, or both, may add to the complications. Interference with the taking of food or with breathing may arise. Procedures for treating cancer under such varying circumstances differ, of course, in the various clinics. These variations in procedure may depend upon the basic premisses accepted in the individual clinic, or be governed by the treatment facilities available.

At the Memorial Hospital external radiation—radium or *x* rays, or both—is employed over both primary growth and cervical lymph nodes in all cases. Radium, in the form of filtered radon by interstitial implantation, is depended upon for control of the primary growth. Infection and tumour invasion of bone within the mouth or sinuses is a surgical problem. The cervical nodes are left to external radiation unless palpably involved. The palpably involved node of adult type epidermoid carcinoma, unilateral and with intact capsule, is treated by complete unilateral neck dissection, plus radon implantation within the wound in such fashion as to irradiate heavily any suspicious areas. Bilateral involvements or nodes with perforation of the capsule by growth are treated by a combination of operative surgery with radium—surgical exposure under local anaesthesia and filtered radon implantation. The metastatic nodes of undifferentiated growths are treated by irradiation entirely, even though technically operable. Direct radon implantation is usually indicated, and to facilitate this surgical exposure is resorted to. The treatment of intra-oral cancer affords the best and most varied example of the value of combining operative surgery and radiation in meeting the needs of the individual case.

In some clinics with a limited radium supply, the practice of removing the primary growth surgically, usually by one of the cautery methods, and following this by radium needle applications, is prevalent. From experience with radon implantation plus surgical removal in certain instances to overcome deep-seated infection, it would seem desirable to reverse the order of that procedure. The condemned area might well be utilized as a radium needle holder, the growth devitalized before operation, and the adjacent tissues substantially irradiated preliminary to surgical traumatization.

With extrinsic laryngeal cancer, treatment by irradiation, external and interstitial, is the only resource, except for the few highly radio-sensitive growths where *x* rays alone in maximum dosage may be sufficient to produce complete regression. If broad surgical principles are adhered to, all of these growths are inoperable. Intrinsic laryngeal cancer presents a different picture. A certain percentage of these growths are surgically operable. The anatomy of the parts facilitates removal by total extirpation of the larynx. Metastasis rarely occurs until late in the course of the disease. Under such circumstances the selection of treatment procedure becomes a matter of preference. In our clinic radium is employed through choice. In the majority of cases direct radon implantation, following heavy external irradiation, is carried out through the exposure by laryngotomy—again an example of combining a conservative operative procedure with irradiation for the purpose of greater technical accuracy.

Continuing, the mucous-membrane-lined tract downward into the bronchial tree, oesophagus, and upper gastro-intestinal tract, leaves much to be desired from all forms of treatment, especially radium. Few growths lend themselves to interstitial implantation anatomically, and the hazards of infection are great. A considerable degree of palliative relief has been produced in these areas through the growth restraint induced by external radium or *x*-radiation. Further benefit lies probably in technical improvement of the methods of external radiation, except possibly in cancer of the upper gastro-intestinal tract. This field ought to claim the sympathies and ingenuity of a master gastro-intestinal surgeon, willing to forgo some of his preconceived ideas, inform himself of the fundamentals of irradiation therapy, and thus combine forces in a new approach.

In the rectum and lower bowel much has already been accomplished both curatively and palliatively by intensive irradiation with and without surgical co-operation, and as indicated by the special features of the individual case.

Cancer of the female pelvic organs is extremely interesting radiologically. In the treatment of cancer of the cervix uteri radium has achieved its most notable success. It is the agent of choice. The involved part is extremely tolerant of heavy irradiation; it is relatively insensitive to pain; it is accessible. Histologically, more than half of the growths are of the plexiform epidermoid type, showing a relative lack of cellular differentiation and hence radio-sensitive. Historically, it is interesting to note that the gynaecological field was one of the first to employ radium, and this vision and courage on the part of a few pioneer gynaecologists did much to advance radium therapy to the position which it now occupies.

Carcinoma of the corpus uteri differs from the cervix growth in histological type, in anatomical relationships, in accessibility, and in its mode of extension and dissemination. Radium undoubtedly fills a useful place in early questionally malignant lesions and in advanced questionably operable cases. In the intermediate, well-established group, however, hysterectomy is the method of choice.

These two types of growth in the same organ afford a clear-cut and nice distinction in the choice of a treatment method.

Growths of the external genitals, male or female, are for the most part epidermoid carcinomas, and hence are subject to the same general principles of treatment as epidermoid carcinoma elsewhere. The same is true of bladder cancer, except for its inaccessibility. The papillary type of epidermoid carcinoma predominating in the bladder is relatively radio-resistant, so that heavy irradiation dosage is necessary for its control. In spite of this, direct exposure by suprapubic cystotomy and direct filtered radon implantation is preferable in most cases to the various operative procedures advanced.

Cancer of the prostate may yield completely to interstitial irradiation; in any event a variable degree of growth restraint may be brought about. Radium is, in general, the agent of choice, not because of the brilliance of the results, but because it accomplishes at least as much and affords greater palliation with less hazard than operative measures.

Cancer of the breast represents one of the largest groups of malignant disease. The histological types and variations are numerous. Fat predominance in the tumour bed is not duplicated elsewhere. Metastasis, whether by direct permeation of lymphatics or by showers of vascular tumour emboli, is early. The tendency toward generalization of metastatic involvement is much greater than is ordinarily thought to be the case. Metastatic extension beyond the axilla is not only surgically inoperable, but is so deep seated, as well as generalized, that it is radiologically inaccessible. Breast growths, as a group, are relatively radio-resistant, not only on account of their histological structure, but because they tend to infiltrate adjacent fat tissue. An active radiation reaction is difficult to produce in fat tissue, probably because of the limited blood supply and the tendency toward fat necrosis under the influence of heavy irradiation. In spite of these discouraging factors, radiation has contributed much to the treatment of the breast group. For widespread irradiation, *x* rays are obviously the agent of choice. For localized applications externally or for implantation, radium has its place.

Pre-operative and post-operative irradiation is accepted as of distinct value; the former is preferred. Questionably operable cases and breast cancer in the aged are better treated by irradiation than by operative measures. The strictly operable group is thus sharply limited. The palliative benefits of irradiation in breast cancer are probably greater than in most other groups. The benefits of radiation are not limited, however, to palliation only. The group of clinically cured cases, treated by irradiation only, is steadily increasing. In certain instances this has been accomplished by heavy, prolonged external treatment. For the most part, however, it has been in conjunction with some form of interstitial irradiation. The measure-

ment of dosage intensities by Lee and Pack, following the plan employed by Martin and Quimby in their dosage intensity calculations for intra-oral cancer, suggests the need for greater relative intensities in breast cancer than in mouth cancer. They have demonstrated at the same time that these required doses of intensities, well beyond ten erythemas, can be carried through practically. Their minimum standards of intensity have not yet been determined, and it may be found that a very considerable percentage of the cases respond to a much lower relative quantity of irradiation.

In the lymphatic, glandular, neoplastic, and pseudo-malignant diseases—lymphosarcoma, Hodgkin's disease, and leukaemia—radium may be useful, and is occasionally of real value for some specific reason. In general, however, the widespread character of the involvement lends itself best to treatment by *x*-radiation. The treatment is palliative only.

The bone tumour problem is as discouraging as it is fascinating. Radiation has made but two distinct contributions, attributable alike to either *x* rays or radium, or both. Giant-cell tumours of bone are curable by external irradiation. The peculiar response of endothelial myeloma of bone to radiation led originally to its recognition as a definite clinical entity, and irradiation has remained the treatment of choice. The tendency to early and widespread dissemination of this growth, however, renders cure extremely doubtful. The true osteogenic tumours of bone are extremely radio-resistant, and radium has done nothing more than afford a moderate degree of palliative relief and growth restraint.

Summary.

1. Radium has made a notable contribution and has added stimulus to the general problem of cancer investigation.
2. Since it is an agent for local application only, it must not be regarded as an ideal cancer cure.
3. It has, however, increased the curability of cancer.
4. It has reduced the limits and the severity of many operative surgical procedures.
5. It has supplanted some surgical operations entirely.
6. It has relieved operative surgery of the responsibility for attempting the unreasonable or impossible, as a frantic effort, in a large and varied group of cases.
7. It has made possible a larger measure of palliative relief in advanced cancer.
8. Advancement in radium therapy depends upon the intensive co-operation of pathologist, clinician, and physicist.
9. The technical problems of application and dosage intensity must be calculated and made with the greatest possible care and precision.
10. The combination of radium emanation, *x*-radiation, and operative surgery offers far more in the average case of cancer than adherence to any one agent alone: they are complementary, and not competitive.

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"DECEREBRATE RIGIDITY" IN MAN.

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(*With Special Plate.*)

At the outset we wish to point out that, although the title of "'Decerebrate Rigidity' in Man" has been given to this short paper, we have made the publication rather to encourage interest and observation in this subject and to relate a very interesting clinical case than to record a detailed clinico-pathological study; for, from this latter point of view, our records are incomplete.

As Walshe[9] points out, the variety of clinical features already included under this designation indicates that there has been no clear guiding conception of what a very definite condition true decerebrate rigidity is, and the term bids fair to become a vague label including all obscure forms of tonic spasm in a category which has a thoroughly false air of scientific precision.

Experimental Decerebrate Rigidity.

Since Sherrington[7] detailed his experimental results of transection of the brain stem of animals and described the resulting picture of "decerebrate rigidity" or "reflex standing," there has been considerable difference of opinion as to what clinical picture constitutes its counterpart in man.

Experimental decerebrate rigidity occurs when the greater part of the anterior portion of the brain is removed by a coronal section through the hinder part of the mid-brain, in a plane bounded dorsally by the posterior limit of the superior corpora quadrigemina and ventrally by the region immediately caudad to the corpora mammillaria. This section cuts off the greater part of the red nucleus from the body; if the transection passes above the red nucleus, the muscle tone remains normal. Rigidity persists as the plane of the transection passes caudally through the pons and medulla to the level of entry of the acoustic nerves and Deiters's nucleus. Thus the brain stem centres responsible for decerebrate rigidity clearly lie in the pons and medulla.

In this experimental decerebrate rigidity there is a great increase of tonus in the extensor group of muscles, with reflex inhibition of tonus in the antagonistic flexors in accordance with the laws of reciprocal innervation. On being suspended, the animal hangs with its fore limbs thrust backward, with retraction at the shoulder-joint, straightened elbow, and some flexion at the wrist. The hand of the monkey is turned with its palmar aspect somewhat inward. The hind limbs are straightened and thrust backward; the hip is extended, the knee very stiffly extended, and the ankle somewhat extended. The tail is straight, horizontal, or stiffly curved upward. There is a little opisthotonos of the lumbo-sacral region, and the head is kept lifted up against gravity. Sherrington regards this rigidity as reflex standing—the result of release or removal of inhibition of the postural reflex; it can be abolished by section of the appropriate afferent posterior nerve roots.

Decerebrate Rigidity in Disease.

The problem is to ascertain what is the counterpart in man, in a physiological sense, of this experimentally produced rigidity.

Kinnier Wilson[13] has carefully analysed and recorded conditions—the results of cerebral haemorrhage, meningeal inflammation, or intracranial tumours—in which there has been, coupled with the impairment of consciousness, tonic rigidity of the trunk and limbs. He considers that these clinical pictures minutely resemble experimental decerebrate rigidity. In many of these cases frequent exacerbations are superadded in the form of tonic or postural fits, accentuating and exaggerating the background of tonic posture. The cases fall into three groups: (1) decerebrate rigidity (or attitude) and tonic fits combined; (2) cases of decerebrate attitude without tonic fits; (3) cases of tonic fits without persisting decerebrate attitude. Hughlings Jackson[5] described attacks of rigidity in cases of cerebellar tumour. Many of these cases showed also tetanus-like seizures, in which the patient exhibited opisthotonos with extension of the lower extremities and flexion of the upper extremities, but he considered that the causation of the two conditions was different. In Wilson's opinion the involuntary postures of a limb or segment of a limb in many forms of nervous disease, as well as the transient positions assumed in involuntary movements such as chorea and athetosis, are in reality simply parts of the complete decerebrate attitude.

Walshe,[11] on the other hand, carefully studied the problem of Sherrington's decerebrate rigidity from the point of view of its occurrence and recognition in the human subject, and concluded that, while in the spasticity of hemiplegia and the paraplegia in extension, there is a clear example of hypertonus physiologically identical with that observed in the decerebrate animal; for the most part, the cases recorded as decerebrate rigidity in man are examples of different varieties of extrapyramidal syndromes or tonic fits, none of which can be identified with Sherrington's decerebrate rigidity. He recorded a case,[10] which he considered a closer approximation to the experimentally produced condition than any previously encountered. The patient lay motionless and unconscious on her back, with the head in the median position. There was no trace of head retraction. The arms lay across the chest, semiflexed at the elbows, with the forearms slightly pronated and the wrists and digits flexed. The legs lay extended and adducted, with the feet plantar flexed. There was spasticity of moderate degree in all four limbs, definitely more pronounced in the arms than in the legs. The tonus was plastic and "clasp-knife" in character. The tendon-jerks were all very brisk, the abdominal reflexes absent, and the plantar responses extensor. The tonic neck reflexes of Magnus and de Kleijn were also obtained.

There are two points of defect from the complete picture of decerebrate rigidity: the first, the flexion posture of the upper limbs, and the second, the retention of temperature control. The flexed position of the upper limbs may be traced to the fact that in man the fore limbs are no longer simple locomotor props, but have taken on new and highly complex functions under the influence of the cerebral cortex. In consequence, they would not be expected to take up the extensor attitude of standing. In this case, it was at the stage of failing reflex activity, when the phenomena of decerebrate rigidity were finally disappearing, that tonic fits and the accompanying respiratory and cardiac irregularities appeared. This was regarded as demonstrating the fundamental difference between tonic fits and true reflex decerebrate rigidity, and as showing that there was no correlation between experimental decerebrate rigidity and the types of muscular spasm seen in extrapyramidal syndromes. Post-mortem examination revealed a suprapituitary cystic tumour and a well-marked secondary hydrocephalus; pressure from these on the structures in the anterior part of the brain stem produced the effect of decerebration by cutting off the cerebral hemispheres from functional connexion with lower levels.

The anatomical site of the lesions in Wilson's cases, with extended neck and spine, adduction at the shoulder, extended elbow, internal rotation, hyperpronation and flexion of the wrist and fingers, was similar to that of experimental decerebrate rigidity. Wilson regards the two states as physiologically equivalent, whereas other observers regard the hemiplegic posture in man—that is, flexion of the upper and extension of the lower limb—as the equivalent of decerebration in animals. Brain[1] considers that these views are not mutually irreconcilable. He has observed, although it is not always easy to demonstrate, that an extensor attitude of the upper limb, which exactly reproduces the posture of this limb in a "tonic fit," can be reflexly evoked in a hemiplegia by making the patient assume a quadrupedal attitude. This posture is the normal quadrupedal standing attitude of the anthropoid ape when on all fours. On the other hand, the "hemiplegic" attitude of flexion of the upper with extension of the lower limb is the primitive erect standing attitude of our subhuman ancestors. Man has passed through two stages in evolution: the more primitive characterized by quadrupedal standing, the later by erect standing. Thus, if by decerebrate rigidity is understood the posture of reflex standing, man may exhibit two decerebrate attitudes—quadrupedal and erect—the former of which (the attitude of "tonic fits") is the pathological equivalent of decerebrate rigidity in animals.

It will thus be seen that the cases appearing under the heading of decerebrate rigidity in the literature present considerable variation in the type of tone, in the posture assumed, and in the reflexes. Cobb,[3] Weisenburg and Alpers,[12] Zand,[14] and recently Epstein and Yakovlev,[4] have contributed, among others, to the literature on this difficult subject. In clinical practice, especially in children, cases are not rare in which the child is in such a fixed rigid attitude that it may be lifted into the vertical from the horizontal posture by placing one hand under the head. The actual position of the arms and legs in these cases varies considerably, but the type of tone increase appears to be more frequently extrapyramidal than pyramidal.

Notes on a Case.

The following case was under the care of one of us (J. S. M.) for a period of ten years, and during the greater part of the time he lay motionless and speechless, like a log, with his arms adducted and flexed at the elbows and wrists, and his legs rigidly extended—in the position regarded by Walshe and others as the physiological counterpart of experimental decerebrate rigidity.

A. B., male, was observed in November, 1918, at the age of 67, to incline to the right when out walking. Early in 1919 he complained of stiffness in his left shoulder and pain in the left leg, so that he had great difficulty in dressing. He was treated at Buxton for rheumatism, but returned unrelieved. About this time he lost all interest in his business and in his surroundings; he was frequently disorientated as to time and place, and would hold the newspaper upside down, although apparently reading it. He slept readily, and did not now complain of pain. Early in 1920 he exhibited great emotional distress at the death of his son, aged 24. A neurologist saw him in April, 1920, and noted a peculiar stiffness and slight weakness of the left side of the body, with ankle-clonus and an extensor plantar response. He considered the condition to be due to cerebral arterio-sclerosis, with softening in the right internal capsule. A. B. became gradually worse; the right arm became stiff, and he was only able to walk about the room with great difficulty.

In 1921 he became bed-ridden, and his apathy to his surroundings was more pronounced. The lower limbs were rigidly extended, with marked exaggeration of the tendon reflexes, bilateral extensor plantar responses, and ankle-clonus; incontinence of urine and faeces supervened. He could still use his arms for feeding himself.

During 1922 his condition altered but little; he recognized his attendants, but seldom spoke. In 1923 he was unconscious for three days, and it was thought that he was going to die. Towards the end of the year his wife had a cholecystectomy performed; when she returned home early in 1924 and explained where she had been, he remarked, "You look as if you had had your wings clipped." He made no further remark, and lapsed into his usual silence and apathy. In June, 1924, the family moved to a house in a brighter and sunnier situation, but he made no comment; he was utterly indifferent and apathetic; the increase in tone in the upper limbs now became so marked that he had to be fed.

The years 1925 and 1926 passed without much change, except the increasing rigidity of all four limbs. The upper limbs were strongly adducted at the shoulders, semiflexed at the elbows, with pronation of the forearms and semiflexion of the fingers. The rigidity in the lower limbs was so marked that it was impossible to flex the limbs, and when an attempt was made to abduct one leg, the other followed in the same direction. There was some retraction of the head; swallowing was fairly good with slow feeding, and the ocular movements were apparently full. Trophic sores appeared on the left leg and foot in 1927; the pulse, at times, thin and thready, at times full and strong, varied in rate from 68 to 110. In 1928 his general condition deteriorated and his muscles wasted. He lay like a log, not speaking, and apparently not recognizing any of those in attendance. His wife used to hear him mumbling in his sleep, but she could never understand what he said. It is interesting to note that in June, 1928, when one of his sons brought his 3-year-old twin daughters to see their grandfather, seeing one and not the other, A. B. said, quite clearly, "Where is the other?" He had not spoken since 1924, when he made the cryptic remark about the clipping of his wife's wings. He died on September 17th, 1928, at the age of 77, ten years after the onset of the first symptoms, and after having been bed-ridden and practically speechless for seven years.

In the post-mortem, permission was granted for the examination of the brain only. On removing the calvarium it was seen that the dura mater was thickened and excessively vascular in the right pre-Rolandic area; it covered, and was adherent to, a firm, rounded tumour, about two inches in diameter. The tumour had all the appearances of an endothelioma (growing from the falx cerebri). As is usual with these tumours, the surrounding brain tissue gave the appearance of having been hollowed out by the tumour. Beneath the tumour there was a softening extending into the basal ganglia; the medial surface of the opposite

hemisphere showed the imprint of pressure from the tumour, but the anterior cerebral artery was not occluded. The ventricle in the left hemisphere was somewhat dilated; there was no obvious softening in the left hemisphere, and the pons and medulla appeared normal. The cerebral vessels showed only a slight degree of atheroma. The specimen was sent to Sir Arthur Keith, and is now in the Royal College of Surgeons Museum (5018.2).

Microscopical examination confirmed the endotheliomatous nature of the tumour, and showed some degeneration in the pyramidal tracts in the mid-brain and pons, but not in the medulla oblongata.

We regret that we have no notes of careful observations on the type of tone increase or of the tonic reflexes of Magnus and de Kleijn and other observations, which, correlated with a complete pathological examination, would have made a very valuable record. In view of the incompleteness of the clinical details, a complete serial sectioning of the mid-brain and pontine regions was not considered warranted.

The early rapid progressive dementia and other unusual features encountered in this case, in contrast with those usually found in a frontal endothelioma, make it probable that a considerable portion of the symptomatology was due to cerebral vascular disturbances. Jefferson,[6] in recording states of bilateral rigidity—which were accompanied by "tonic seizures" consisting of sudden accesses of rigidity—in middle meningeal haemorrhage, regarded the generalized rigidity as the result of disturbance of a very fine circulatory balance or a relative anoxaemia sufficient to suppress cortical control, but not great enough to render inactive the causal mechanism in the mid- and hind-brain.

We would call attention again to the two apposite utterances in 1924 and 1928, which contrasted very strongly with his otherwise complete silence and apathy for about seven years. It seemed that when an external stimulus was powerful enough to revive a thought or idea to a certain degree of intensity, it could be expressed in spoken words. It is interesting to speculate whether these gleams of comprehension could be explained by Spearman's theory[8] of the two factors "g" and "s"—"g" representing the general mental energy, and "s" the special group of neurones activated by that energy. In A. B. the "g" factor was too feeble as a general rule to activate any special group of neurones "s" to such an intensity that utterance was possible.

Attention has been called again to the divergent views which are held as to what constitutes clinical decerebrate rigidity. Can these views be reconciled? Can we explain why these cases, which broadly might be described as being characterized by generalized rigidity, present such differences in the posture assumed and the type of increase of tone? In contrast to the case of A. B., recorded above, one of us (F. R. F.) has under his care at the present time a boy, aged 12, with the "decerebrate attitude" picture of Kinnier Wilson, probably the result of encephalitis. He came under medical observation two years ago for attacks of falling backwards, which were regarded as petit mal. There was no loss of consciousness, and his general and mental states were quite good. At the present time (as he lies in bed) his head is lifted forward, his lower back is slightly arched forward, his arms are extended, adducted, and pronated with slight rapid rhythmical tremor of the left hand. The legs are rigidly extended and the feet are markedly plantar flexed. He moves very little voluntarily, but can be lifted and turned like a "plank of wood." When placed erect, he stands on tip-toes, and would fall backwards if not supported. His smile is slow, stiff, and spastic; intelligence is practically normal. There is generalized muscular rigidity. The tone increase is of the typical cogwheel type, and the limb assumes the posture into which it is placed for a few minutes before returning to the original position. There is no reflex evidence of involvement of the pyramidal tract—the abdominal reflexes are brisk, knee-jerks normal, and plantar responses flexor. He shows the tonic neck reflexes of Magnus and de Kleijn. From time to time he has "tonic fits" in which the abnormal posture is exaggerated.

Wilson says: "In the condition which has been regarded as decerebrate rigidity in man—that is, one of complete interruption of function, both cortico-spinal and strio-spinal, produced by lesions of various kinds, roughly speaking at the level of the mesencephalon—what do we find? Since the striatal system is out of action, we might expect the universal rigidity of the post-encephalitic Parkinsonian, but it does not develop. Instead, we get an attitude in extension, which may fairly be regarded as indicative of an attempt at 'reflex standing.' In other words, the posture produced by release of function, when both old and new systems cease to act on the spinal neuraxis simultaneously, is that of release neither from the one nor from the other." From clinical data, he has argued that the results of complete single release (hemiplegia and paraplegia) are not identical with those of complete double release (decerebrate rigidity) where both cortical and striatal efferent systems are affected. It would appear that the resulting picture depends on the degree to which these two systems are affected and their relative importance in a particular subject—animal or human, young or old.

It is hoped that the recording of this undoubtedly interesting clinical case will stimulate interest in this problem of "generalized rigidity," and will lead to more complete examinations, which in turn will help to solve the problems of the motor pathways and the lesions which result from disease of them. In the current number of the *Journal of Neurology and Psychopathology*, Carmichael[2] has given an excellent short account of a human mid-brain preparation—the type of case to which generally little or no attention is paid from the point of view of scientific interest.

Practitioners frequently have not the opportunity of reading the works of experimental physiologists and of studying posture in detail, but it is hoped that by calling attention to clinical decerebrate rigidity, we will give neuropathologists a better opportunity for studying the problems of the motor system in the light of accurate, full clinical histories, and neurological examination.

It is a pleasure to acknowledge our thanks to Dr. E. E. Bowden for his assistance in making the post-mortem examination, and to Dr. Cecil Beadles for his interest in the specimen and the accompanying illustration.

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CYST OF THE URACHUS.

BY

ARCHIBALD RONALD, M.D., F.R.C.S.Ed.

(*With Special Plate.*)

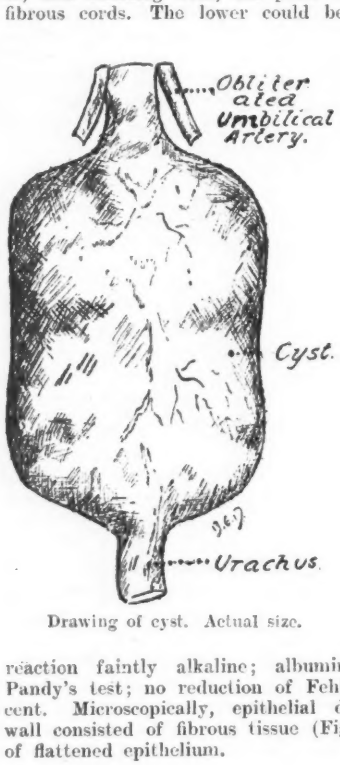
Complexity of development in the lower urinary tract affords ample opportunity for the occurrence of congenital abnormalities. Persistence of the intra-abdominal part of the allantois from the bladder to the umbilicus as a patent urachus, or the imperfect obliteration thereof with cyst formation, are among the less common varieties. Urachal cysts attract attention either from their increasing size or from the advent of infection. Some cases are discovered accidentally either at operation or at autopsy. The case reported below was unsuspected prior to operation. The patient, a young adult male, aged 26, had not suffered from any previous illness.

Report of Case.

About one year before admission the patient experienced attacks of "sharp" pain in the right iliac fossa. The pain persisted for three to four hours. After an interval of five or six months the attacks recurred, and were of greater severity. Local applications of counter-irritants failed to relieve his symptoms, and he was referred to the out-patient department of the Royal Albert Edward Infirmary, Wigan. At that time examination revealed slight tenderness on deep pressure in the right iliac fossa, and a diagnosis of mild appendicitis was made. A radiographical examination after a barium meal showed some delay in the ileo-caecal region.

The patient was admitted two weeks later. He then had no pain before or after meals, the appetite was good, and the bowels slightly constipated. The anterior abdominal wall moved freely on respiration. There was no irregularity of contour. Palpation revealed slight deep-seated tenderness in the right iliac fossa. No abnormal mass was detected. No pain was associated with micturition. There was no haematuria, but slight frequency by day was present. Urine: sp. gr. 1024, reaction acid, albumin and sugar absent.

Operation.—May 9th, 1929. The appendix was delivered through a gridiron incision, and showed a sharp kink about one inch from its base. At the angle it was unduly firm to the touch. The appendix was removed. Exploring further, the examining finger came into contact with a soft rounded swelling fixed to the anterior abdominal wall midway between the umbilicus and the pubis. The tumour was pulled into the wound, and was found to be lying extraperitoneally. By dissecting the peritoneum off the anterior abdominal wall, the tumour was mobilized and delivered. The cystic character of the tumour was at once apparent, and its position suggested its urachal origin. Attached to, and blending with, the poles of the cyst were two rounded fibrous cords. The lower could be traced to the apex of the urinary bladder, and traction on the upper demonstrated its attachment to the umbilicus, and at the same time brought into view the two obliterated hypogastric arteries converging on the urachus as it passed towards the umbilicus. The urachus was ligated above and below the cyst and divided. Recovery was uneventful.



Drawing of cyst. Actual size.

Further questioning after the operation failed to elicit any additional urinary symptoms, and cystoscopic examination did not reveal any abnormality of the bladder.

Specimen.—The cyst was of the shape shown in the drawing reproduced herewith, and measured 5.5 by 3.5 cm.; 24 c.cm. of colourless, slightly opalescent fluid were withdrawn from the cyst, and the tests showed the following: sp. gr., 1014; reaction faintly alkaline; albumin, trace; globulin, trace to Pandy's test; no reduction of Fehling's solution; urea, 0.25 per cent. Microscopically, epithelial debris was found. The cyst wall consisted of fibrous tissue (Fig. 1), lined by a single layer of flattened epithelium.

Etiology.

Luschka[1] states that complete closure of the canal is usually noted only for a short distance above the bladder, the urachus showing the cavity again for 5 to 7 cm. above the obliterated part. This inherent tendency to develop spindle-like dilatations is a very important factor in the etiology of urachal cysts. The exact mechanism of the transition of such minute cysts into tumours filling the whole of the lower part of the abdomen is not quite clear. Mearn's[2] theory that increase in size is due to the secretory function of the lining cells does not seem in keeping with their histological character, and from the knowledge that they are derived from the same source as bladder epithelium, to which a secretory function is never attributed. Binnie[3] has given an explanation which might hold good in a few cases—namely, persistence of communication with the bladder associated with some obstruction to the outflow of urine causing dilatation of the lumen of the urachus. Later, from pressure and inflammation around the neck of the patent urachus, stenosis occurs and a permanent tumour is produced.

The condition is usually detected between the ages of 20 and 40 years; females are affected in the ratio of 3 to 1; but under the age of 15 years the sexes are equally affected.[4]

Pathological Anatomy.

The urachus lies pre-peritoneally, and cysts arising from it have a similar relationship to the peritoneum. Cysts of the urachus vary in size from a few millimetres in length to cysts of enormous size, filling the whole of the lower abdomen and pelvis. The smaller cysts show remains of the longitudinal muscular coat of the normal urachus, and are lined by transitional epithelium. In the larger cysts the wall is mainly fibrous tissue, and the lining a single layer of flattened epithelial cells. The foetal urachus is lined by several layers of epithelium, and in sections the lumen appears occluded with cells (Fig. 2).

Diagnosis.

Urachal cysts are of little surgical importance except when very large or in the presence of secondary infection. Davis[6] pointed out that small cysts will elude the ordinary clinical examination. Cysts of moderate size are palpable below the umbilicus, sometimes slightly to one side of the mid-line, as rounded tumours which move freely from side to side more than up and down. In a patient with a lax abdominal wall a fluid thrill may be detected. Large cysts closely resemble ovarian cysts, and in the majority of cases will be indistinguishable from them. Movement of the tumour from side to side is likely to produce indrawing of the umbilicus in urachal cysts. The differential diagnosis must be made from distended bladder, ascites, ovarian cyst, and localized tuberculous peritonitis. At operation the extraperitoneal situation and connexion with the bladder make the diagnosis obvious.[5]

There are no symptoms referable to the cyst except when it is very large, or from the presence of complications. Pain arises from associated peritonitis. Slowness of micturition has been noted,[5] and also gastro-intestinal disturbances (Uritz).

Complications.

Sepsis is of frequent occurrence in the larger cysts. Haemorrhage into a cyst may bring about a sudden and rapid increase in size, with pain and tenderness. Peritonitis seems to be the rule when a urachal cyst has reached proportions sufficient to give rise to symptoms leading to its detection.

Treatment.

Complete removal of urachal cysts can usually be accomplished without opening into the peritoneal cavity; in the infected cysts, however, the peritoneum may be so adherent to the posterior aspect that this cannot be accomplished, and some difficulty may be experienced in closing the resulting gap in the peritoneum. Marsupialization has proved very unsatisfactory. A paramedian incision lessens the risk of opening into the cyst. In view of the possible presence of a lumen in the lower urachal segment, simple ligation and touching of the stump with pure carbolic acid is indicated.

I am indebted to Mr. Fraser for permission to publish this case, and to Dr. W. E. Cooke and Miss Dyson for their assistance in the preparation of sections and diagrams.

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ORGANIC GASTRIC SYPHILIS.

BY

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(With Special Plate.)

ORGANIC gastric syphilis has received very little study or attention in Great Britain. This is due in no small degree to the rarity of the condition and to the difficulty of obtaining confirmatory pathological evidence. The sceptic is apt to say that the lesion is a coincidence, and is simply some recognized condition occurring in a syphilitic patient. On this account it is all the more necessary for a definite diagnosis to be established between gastric symptoms occurring in a syphilitic subject and actual syphilis of the stomach. It does not necessarily follow that every patient with gastric symptoms and a positive Wassermann reaction is suffering from organic gastric syphilis, even if an organic lesion can be demonstrated. It must be remembered that both ulcer and neoplasm occur in syphilitic patients far more frequently than gumma does. Reference to the work of Chiari[1] and of Crohn[2] proves this.

History of the Disease.

In previous cases which have been recorded, the diagnosis was made from the fact that other specific lesions were present along with gastric symptoms, and because these cleared up under antisyphilitic treatment the diagnosis of "syphilis of the stomach" was made. I do not dispute the probability of the diagnosis being correct, but it is at least controversial. Into this category I put such cases as those described by Andral[3] as early as 1834, and which Monad[4] considers indisputable. The cases may have been syphilitic, but I cannot hold the opinion expressed by Monad that they are indisputable, because there are no data beyond the clinical history and the results of treatment to warrant the diagnosis. I admit that at that time no further data such as *x*-ray examination and Wassermann reaction could be given, but without such investigation no case can be considered indisputable.

Up till 1907 several cases of gastric syphilis were recorded by Continental authors, but proof is lacking that these cases actually showed syphilitic gastric lesions. At this date Pater,[5] in a thesis, reviewed the then existing data, and also discussed 122 cases, rejecting those which did not present microscopical evidence of syphilis. He thus established the fact that cases with gastric symptoms sometimes have syphilitic lesions of the stomach. Since 1907 much has been written regarding syphilis of the stomach, but these contributions to medical literature have been made mostly by American and Continental writers. The majority of these records are based on radiography, the presence of syphilitic lesions elsewhere, a positive Wassermann reaction, or the results found at autopsy or operation. In 1912 Meyers[6] reviewed fifty-eight cases, and the American literature has been added to by McNeil,[7] Morgan,[8] Downes and Le Wald,[9] Smithies,[10] Niles,[11] Eusterman,[12] and others. Eusterman's contribution is on twenty-three cases, and he reviews the literature. He establishes a sound case from the clinical standpoint. From the literature and the cases I have seen, I consider that syphilitic lesions of the stomach can, and do, exist. This is confirmed beyond all doubt, and with a certainty that should dispel all doubts, by McNee,[13] who demonstrated the spirochaete in the lesion. Apart from this, British literature contains nothing but adverse criticism of the subject, with the exception of the cases referred to by Hurst,[14] Fenwick,[15] and Sherren.[16] Muir[17] states that "syphilitic lesions, though rare, occur both in the congenital and acquired forms of the disease." Bennett[18] admits that gastric syphilis does occur, and urges that, "whenever one is confronted with a case of organic gastric disease the possibility of syphilis must be remembered." Wyard[19] reluctantly accepts the possible diagnosis, and in spite of a degree of scepticism he states the case convincingly from the clinical standpoint. I cannot agree with his concluding remarks, however, that "the treatment of this disease is far from satisfactory, and that it may properly be argued that its almost uniform refractoriness to recognized antisyphilitic methods is evidence of some weight that many or most of the cases so diagnosed are not, in fact, specific." The cases about to be described are in striking contrast to this statement.

Clinical Aspect.

I wish to focus attention on the clinical aspect, accepting the fact that pathologically and bacteriologically syphilis of the stomach is proved beyond all doubt, and therefore a clinical diagnosis should be possible and should be looked for oftener than it is. I do not hold the view that this diagnosis should be made because the Wassermann reaction is positive in a gastric case and because symptoms clear up under antispecific treatment. It is a well-known clinical fact that diseases which cause a general constitutional disturbance frequently give rise to gastric symptoms, and these improve or get well with the increasing well-being of the patient. I do not propose to deal with the cases discovered at operation or at autopsy, because, strictly speaking, such are not in the province of the physician. I wish, however, by recording six cases which, in my opinion, are indisputable, to draw attention to the fact that syphilis of the stomach does occur, and that it can be cured by medical means, thus saving the life of the patient or averting operation.

Essentials of Diagnosis.

Before deciding that a patient is suffering from organic syphilis of the stomach the following points have to be satisfied:

1. Symptoms definitely pointing to disease of the stomach or duodenum must be given.
2. *X*-ray examination must show evidence of such disease.
3. The Wassermann reaction must be positive.
4. The symptoms must not yield at all to a "try-out" of recognized treatment for peptic ulcer.

Proof of the cases being genuine is furnished if

1. Symptoms clear up rapidly under light or ordinary diet in conjunction with intensive antisyphilitic treatment.
2. *X*-ray examination shows improvement or recovery.
3. The Wassermann reaction becomes negative or less positive.

It will be observed that confirmation of the diagnosis in the cases is obtained by assuming that the lesions are probably neoplastic, inflammatory, or ulcerative conditions in otherwise syphilitic subjects.

Review of the Cases.

The cases I describe were put on strict treatment in bed and the results were observed. No improvement took place after four weeks of treatment, and further *x*-ray examinations show the conditions unchanged. The patients were, with two exceptions, allowed up on full diet and treated with neokharsivan, potassium iodide, and mercurial inunction. In periods varying from seven to twenty-one days symptoms had disappeared and improvement in their general condition had begun. Treatment was continued, and the final *x*-ray photographs were taken as an indication of cure or very marked improvement. The patients are still well at the end of periods varying from one and a half to five years, and no further treatment has been given. Case 1 died of pneumonia three years after. During that time he remained well. Unfortunately no autopsy was allowed.

I am going to consider six cases only because in these no other lesion due to syphilis was found after thorough investigation. Five were males and one was a female. This corresponds roughly with the incidence in the sexes noted by American authors. The youngest patient was a man aged 36, and the oldest a woman aged 60. Marcus[20] records a case in a lad, aged 19. Two of the male patients admitted infection, one twenty years, and the other two years, previously. According to Meyers[6] the alimentary lesion may appear as early as ten months after infection or as late as twenty-five years. None of the other patients admitted syphilitic infection, and no history could be obtained of a definite primary sore, except in the

two patients who admitted infection; no secondary or tertiary symptoms or signs were admitted. All six patients had a ++ or +++ Wassermann reaction. The shortest duration of symptoms was six months, and the longest eighteen months. The symptoms were progressive from the onset.

Symptoms.

The most frequent symptom is constant pain referred to the upper abdomen. The character of the pain varies from a mild discomfort to agonizing cramp-like seizures, which are superimposed on the general distress in the upper abdomen and come on some hours after food. These seizures are mostly unrelieved by taking food, but are somewhat relieved by vomiting. The underlying general distress is not at all alleviated by vomiting. In all cases the pain, whatever its character may be, is progressive, and the periodic remissions so frequently met with in gastric and duodenal ulceration are absent. In character, therefore, it more closely simulates the distress of gastric carcinoma. Nausea and vomiting are frequent symptoms. The vomitus does not contain blood so often as it does in carcinoma, and only one of the cases showed melaena. Rehfus[21] records four cases where blood was present more or less persistently in the gastric contents. Other observers have recorded fatal haemorrhages. Anorexia is common, and this, with the constant vomiting, leads to loss of weight, marked anaemia, and some degree of cachexia. The anaemia is often extreme, although there is no apparent loss of blood. Cachexia is not so marked as in cases of carcinoma. Jaundice occurs, but although I have seen several cases of this type I have not included them in this series.

Physical Signs and Gastric Analysis.

Physical examination of the abdomen may disclose a distinct mass caused by gummatous tumour formation in the antral or pyloric regions. This was well marked in two of the cases here recorded. There are, however, no physical signs peculiar to organic gastric syphilis.

Achlorhydria was demonstrated in five out of the six cases. The lesion in the case which showed free hydrochloric acid was a gummatous mass causing pyloric obstruction. This is in agreement with the findings of Downes and Le Wald.[9] In this case there was almost complete retention of the gastric contents, and it was in marked contrast to the other cases, where the gastric contents left the stomach rapidly. There was no excess of mucus in any of the cases. Blood and lactic acid were absent; the analysis depends to a great extent on the situation and type of the lesion, and may be influenced by the general debility and anaemia due to the syphilitic infection, for syphilitic anaemia generally shows an achlorhydria. Some authors contend that the syphilitic virus in addition to the localized lesion may produce a general gastritis which is more responsible for the achlorhydria than is the lesion itself. This is rather negatived in the cases here recorded by the fact that no excess mucus was demonstrated. Crohn[22] thinks it is unlikely that any particular form of gastritis exists in these cases to a degree sufficient to cause an atrophy of the mucous membrane and a resultant anacidity or achylia gastrica. Section of the mucosa away from the actual gummatous area fails to show any unusual form of gastritis. The cells and membrana propria are not materially altered.

X-ray Appearances.

There is no definitely diagnostic *x*-ray picture of gastric syphilis. The situation and character of the lesion in the individual case resembles a stenosis, an ulcer, a filling defect, or an infiltration.

Diagnosis.

The diagnosis must be arrived at by careful consideration of all the available data. A purely clinical diagnosis is almost impossible, but in patients who give a history of definite gastric symptoms, especially when combined with achlorhydria, a careful examination of the blood, and if necessary the cerebro-spinal fluid, should be carried out with a view to ascertaining the Wassermann reaction. As previously pointed out, we must not accept that organic syphilis exists even when *x*-ray deformities are found combined with achlorhydria and a positive Wassermann, for cancer and ulcer are far more likely to be present; the final word rests with the result of treatment. Anaemia and cachexia are rarely so marked as in carcinoma showing somewhat similar lesions. Sometimes syphilitic stigmata elsewhere will help in forming an opinion, although in the present series no such stigmata occurred; the absence of metastasis may help in differentiating syphilis from carcinoma.

Owing to lack of space the *x*-ray plates before and after treatment have been omitted in Cases II and III. They were easy of description, and this has been made in the text.

Summary of Cases.

Case I.

Male, aged 57; ex-soldier. For one year complained of a constant gnawing pain in the epigastrium and left hypochondrium. The pain was not much affected by taking food, and was not aggravated by a change from a light to a heavy diet. He frequently vomited after meals, but without relief of pain. The pain was severe at night, but was not helped by taking food. His appetite was poor, and he lost 3 st. in weight during the year. He never noticed any blood in the vomitus, or darkening of the stools. No previous serious illnesses, and denied syphilis. Social condition good. He took no alcohol, and smoked in moderation.

On examination he was cachectic. Cheeks were sunken, and he looked emaciated; abdominal wall sunken; no tumour palpable; no tenderness; recti tense, especially on the left side; slight discomfort on palpating the left hypochondriac region; tongue clean; teeth bad; constipated; no enlargement of liver or spleen; all other systems healthy. No free hydrochloric acid was present; no lactic acid; no blood; no excess of mucus. Wassermann reaction +++; after treatment +−. *X*-ray examination showed filling defect and infiltration of the stomach wall, especially the greater curvature.

Figure 1 (see Plate) shows the condition before and Figure 2 after treatment.

Case II.

Male, aged 38; miner. For eight months the patient complained of constant discomfort in the epigastric region. The discomfort became actual pain about one and a half hours after food. At irregular intervals he was seized with agonizing pain, which required morphine to relieve it, and the distribution of the pain suggested a gastric crisis. Vomiting frequently followed this agony, and gave relief, but the epigastric discomfort still remained. There was no marked difference between night and day symptoms. His appetite was poor, and he lost 2 st. in weight during eight months. No blood in vomitus and no melaena; no previous serious illnesses, and denied syphilis. Social condition good. He took no alcohol, and smoked in moderation.

On examination he was pale and emaciated. Abdominal wall tense; palpable tumour in the pyloric region; marked tenderness over upper right rectus in the area of the palpable mass; succussion five hours after food; tongue clean; teeth good; no constipation; no enlargement of liver or spleen; all other systems healthy. Excessive resting juice; moderate mucus; high free hydrochloric acid; no blood; no lactic acid. Wassermann reaction +++; after treatment −. *X*-ray examination showed almost complete pyloric stenosis. Practically no barium had left the stomach in five hours. One month after treatment was begun *x*-ray examination showed that much of the barium had left the stomach in five hours, and there was only a small residue. Unfortunately this man had to go abroad, and further plates could not be obtained. The tumour could not be palpated when he left, and he had no symptoms. The stomach was emptying better, and showed greater motility. Treatment was continued, and he is still well at the present date, five years afterwards.

Case III.

Male, aged 53; steel-worker. For one and a half years complained of flatulence three hours after food. The flatulence was relieved by taking food, but he was left with a feeling of weight in the epigastrium and right hypochondrium. At times he had acute pain, which was confined to the upper abdomen. The pain did not seem to have any relation to food, and sometimes came on during the night. He vomited now and again, and sometimes this gave partial relief. There was never any blood in the vomitus. On more than one occasion he had melaena. His appetite was poor, and he lost weight to the extent of 2½ st. No previous serious illnesses. Admitted having had syphilis twenty years previously. Social condition good. At one time took alcohol to excess, but for five years had been teetotal. Smoked in moderation.

On examination he looked pale and ill; he appeared to have lost weight, although not definitely emaciated; abdominal wall tense; no palpable tumour; marked tenderness over right rectus from the costal margin to the level of the umbilicus; no succussion; tongue clean; edentulous; very constipated; no enlargement of liver or spleen; all other systems healthy. No free hydrochloric acid; mucus normal; no blood; no lactic acid. Wassermann reaction ++; after treatment −. *X*-ray examination showed marked duodenal deformity, which entirely disappeared after six months' treatment.

CASE IV.

Male, aged 36; sailor. For six months complained of pain three to four hours after food. Relieved by taking food. Nocturnal pain frequently present, and relieved by taking food. Pain was agonizing, and sometimes required morphine to relieve it. There was in addition to this pain a constant aching in the epigastrium and right hypochondrium. He vomited frequently without relief. No melaena, and no blood in vomitus. Appetite poor, and he lost 2 st. in weight. No previous serious illnesses. He admitted having had syphilis one and a half years previously, for which he had some medical treatment, but no injections. Took no alcohol, but smoked heavily.

On examination he was cachectic. He was very weak and appeared ill. The condition of the skin pointed to marked loss of weight. Abdominal wall tense; no palpable tumour; marked tenderness over right rectus from the costal margin to the umbilicus; no succussion; tongue clean; very constipated; liver and spleen not enlarged; all other symptoms healthy. No free hydrochloric acid; mucus moderate; no blood; no lactic acid. Wassermann reaction +++; after treatment −. *X*-ray examination showed irregularity of filling of lower part of the body of the stomach and duodenal deformity.

Figure 3 shows condition before and Figure 4 after two and a half months' treatment.

CASE V.

Female, aged 60; housewife. For one year complained of increasing pain in the epigastrium. The pain was constantly present, and was not affected by taking food. She frequently vomited, but without relief of pain. At times she had agonizing cramp-like seizures in the right epigastrium and hypochondrium suggestive of gall-bladder colic. Appetite poor, and she became bed-ridden on account of weakness due to emaciation. She was literally "skin and bone." She did not know how much weight she had lost, but it must have been considerable. No blood present in the vomitus; no melaena; no previous serious illnesses; denied having had syphilis. Social condition fair; took no alcohol, and did not smoke.

On examination she was markedly cachectic-looking and very emaciated. Abdominal wall lax and sunken. There was a visible tumour extending from the middle line well into the right hypochondrium. It moved slightly with respiration. It was slightly movable on palpation, and not particularly tender. Tongue clean; edentulous; constipated; no enlargement of liver or spleen; all other systems healthy. No free hydrochloric acid; mucus scanty; no blood; no lactic acid. Wassermann reaction ++; after treatment +−. *X*-ray examination showed filling defect in the antrum. Surgeon's opinion: inoperable carcinoma.

Figure 5 shows condition before and Figure 6 after treatment.

CASE VI.

Male, aged 54; labourer. For one and a half years complained of constant dull pain in the left epigastric region and left hypochondrium. The pain frequently became acute almost immediately after taking food. Vomiting occasionally took place. The vomitus never contained blood, and there was no melaena. Sometimes the acute pain lasted for a day or two at a time. Appetite poor, and he generally felt weak. He lost 2½ st. in weight in a year. He had had no previous serious illnesses, and denied having had syphilis. Social condition poor. Moderate drinker and smoker.

On examination he was cachectic and emaciated. There was definite tenderness in the epigastrium one inch above the umbilicus and diffuse tenderness into the left hypochondrium. Tongue clean; teeth bad; no constipation; no enlargement of liver or spleen; otherwise healthy. No free hydrochloric acid; moderate amount of mucus; no blood; no lactic acid. Wassermann reaction +++; after treatment −. *X*-ray examination showed definite ulcer on the lesser curvature.

Figure 7 shows condition before and Figure 8 after treatment.

Prognosis.

The prospect of cure in cases of gastric syphilis is good, provided intensive treatment is employed. This is true of all the cases recorded here, even where a palpable mass has been present. Improvement takes place almost at once, and within six months the most obstinate case failed to show physical or *x*-ray evidence of disease. Most of the cases were negative on examination at the end of two to two and a half months. In this I agree with Einhorn,[23] who records a case with a palpable tumour which yielded to treatment in six weeks. Le Wald,[24] on the other hand, thinks that beneficial end-results are slow, and records a case which took nine years to bring about return to excellent health. The general opinion is that the condition is capable of cure or marked improvement. Eusterman[12] states that the total cured and improved is 69 per cent., and that treatment instituted during the exudative stages gives brilliant results.

Treatment.

Treatment can be ambulatory, unless the physical condition of the patient is too low. Food should be given in a manner that will not irritate the stomach, but almost any kind of food can be taken. Meat should be minced, fish and fowl creamed, fruit and vegetables given as purées, and bread, etc., should be toasted so as to be crisp and require mastication. If these points are attended to I do not think the nature of the diet requires any further attention. Neokharsivan in doses varying from 0.3 gram to 0.9 gram is given in one, two, or more courses, as the individual case requires. Potassium iodide has a marked effect, and doses up to 30 grams three times a day should be administered. Mercurial inunction should also be freely used. Patients appear to stand the intensive treatment well, and no trouble of any kind was met with. Iodide and mercury should be given, with short periodic rests, even after physical signs and symptoms have disappeared.

Summary and Conclusions.

1. Syphilis of the stomach, though rare, does exist, and in searching for a diagnosis should be considered oftener than it is.

2. Six cases are recorded, of which four denied having had syphilis, so that denial of a primary infection should not exclude the possibility of the diagnosis.

3. In most cases the disease is characterized by continuous pain, which is progressive, and has superimposed on it other pains of varying type.

4. Vomiting is frequent and haemorrhage rare.

5. A palpable tumour is sometimes felt, and there is marked loss of weight and moderate cachexia.

6. Definite *x*-ray deformity is seen, and gastric analysis shows an achlorhydria, except where there is pyloric stenosis.

7. Syphilis should be considered in all atypical cases of gastric disease, or where ordinary methods of treatment fail.

8. Prognosis is good.

9. Treatment should be intensive.

10. The diagnosis is confirmed by the results of treatment.

I should like to thank Dr. John Henderson, in whose wards some of the cases were treated, and Dr. A. Bruce MacLean, to whom I am indebted for the *x*-ray photographs.

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A LARGE CYSTIC TUMOUR OF THE SOFT PALATE.

BY

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(*With Special Plate.*)

THE following notes describe a large unilocular cystic tumour which was removed from the soft palate. Microscopically this tumour had the appearance of an angio-endothelioma, but clinically the findings suggested a mixed-cell tumour.

The patient, a man aged 57, was sent to the laryngological department of the Liverpool Eye and Ear Infirmary complaining of a "lump" in his throat. He stated that he had noticed a small swelling in the left side of his throat when on active service in 1915. The swelling had been constantly present since that date, and had increased gradually in size during the past fourteen years. The lump had never been painful until it was punctured at another hospital four weeks previously.

On examination there was a large swelling about the size and shape of a hen's egg, almost completely filling the oropharynx. This tumour appeared to occupy the left half of the soft palate, pushing forward, and to the right, and to extend from the junction of the hard and soft palates above to the level of the base of the tongue below. There was a small chink between the right tonsil and the tumour, into which was crowded the uvula. The mass was fixed, firm, and painless on palpation, and the covering mucous membrane was normal. His nose appeared healthy, and the accessory sinuses clear. It was mechanically impossible to examine the larynx or nasopharynx; the latter, however, was not seriously encroached upon, as nasal respiration was quite free. The neighbouring lymphatic glands were not palpable.

X-ray examination by Mr. Thurstan Holland showed no bony involvement; the Wassermann reaction was negative. The provisional diagnosis was mixed-cell tumour of the palate.

The tumour was removed under open ether anaesthesia by blunt dissection; good approach was afforded by the Boyle-Davis gag. Incision over the tumour exposed a bluish capsule, which was separated without difficulty, except at the posterior and inferior poles. During the later stages of the dissection the capsule was ruptured accidentally, and about two and a half ounces of straw-coloured fluid escaped. Haemorrhage was only slight. The wound was sutured and drained at its lower end. The left tonsil became apparent then for the first time as a small flattened plaque. The tumour when excised was seen to consist of a large cyst with solid tumour formation at its lower and posterior parts, and to contain numerous large friable intracystic papilloma-like structures. The patient made an uneventful recovery, and two months later the soft palate appeared symmetrical, was of good mobility, and functioned normally.

Dr. Hugh Smith, pathologist to the hospital, reported as follows:

Macroscopic.

A cystic tumour about the size of a large tangerine orange. Upon section it shows a wall of a uniform thickness of about a quarter of an inch, and filled with intracystic growths, which are very friable. About two drachms of straw-coloured fluid was also present, but more of this was lost in rupture of the cyst during enucleation. The outer wall is smooth, except at one small area, at which point it had been adherent to surrounding tissues.

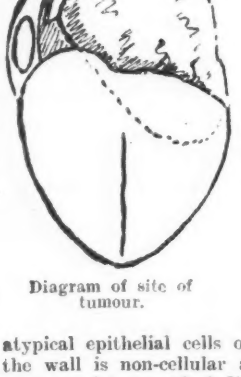

Diagram of site of tumour.

Microscopic.

Cyst Wall.—The sections show that the wall consists of hyaline fibrous tissue in which are interstitial spaces, mainly small and containing isolated red blood corpuscles. In other parts larger spaces resembling cholesterol clefts are seen with foreign body giant cells in this region. A further feature is a considerable amount of apparent blood pigment, golden brown in colour, lying free in places and in others within the cytoplasm of typical and atypical epithelial cells of a squamous type. The inner part of the wall is non-cellular and homogeneous. There is a moderate amount of leucocytic infiltration, mainly of the round-celled type.

Intracystic Growths.—The sections of the solid intracystic growths show what might well be termed an angio-endothelioma, the bulk of the growth being composed of endothelial cells with a tendency in parts to an alveolar arrangement. The blood spaces are numerous, varying in size, some showing a flattened single endothelial cell lining, others no lining cells. Red blood corpuscles are present in most spaces, with occasional leucocytes. The first impression of the microscopic section suggested a similar picture to that seen in a "mixed" tumour, but the sections examined show a uniform appearance, which I have termed an angio-endothelioma.

Mixed-cell tumours are of comparatively common frequency in the oro-facial region, where they are grouped around the upper alimentary and respiratory tracts. The usual situation of such tumours is in the salivary glands, but they are found also in the palate, lip, orbit, molar glands, and, very rarely, in the nasopharynx,[1] nasal fossae,[2] and, as recently described, growing from the posterior aspect of the thyroid cartilage.[3]

The situation where these neoplasms are found next in order of frequency to the salivary glands is in the palate. In the latter location, however, they are regarded as rare tumours. Eggers,[4] in 1928, reported that there were published accounts to be found in the literature of over one hundred mixed-cell tumours of the palate, but only about one-third of these had occurred in the *soft* palate. Sonnenschein,[5] in a more recent contribution, states that the number of mixed-cell tumours of the soft palate recorded up to date (1930) is under fifty, and he describes two personal cases. Sturgis,[6] in tabulating a series of fourteen cases of mixed-cell tumour of the soft palate, states that these tumours usually occur on one or the other side of the soft palate, and very rarely in the midline. The most important clinical facts connected with mixed-cell tumours are their long duration, slow development, and absence of metastases; malignancy of such palatal neoplasms is much rarer than that of similar growths occurring in the salivary glands. Sturgis is of the opinion that the duration of the tumour depends on the susceptibility of the patient to one or more of the following factors in order of frequency: (1) interference with phonation; (2) interference with deglutition; (3) interference with respiration.

In the case reported above the tumour had been present in the left side of the soft palate for at least fourteen years, and there was no clinical evidence of any metastases. Probably owing to the very slow growth of the tumour the patient became accustomed to the gradual diminution of the air and swallowing space, and he made no complaint of dysphagia, and could eat ordinary food until the "lump had been needled." His speech was altered, but respiration was unaffected.

Histologically the neoplasm described consists of epithelial cells, endothelial cells, and blood spaces. Fry,[7] in his account of mixed salivary tumours, describes one type of mixed-cell tumour in which the cells are abundant, are closely packed in irregular masses without any definite arrangement, and in which it is impossible to demonstrate any stroma. Eggers also, in his histologic analysis of four cases of mixed-cell tumour of the soft palate, reports that they consisted mostly of dense masses of epithelial cells, cartilage being very rarely found.

The majority of mixed-cell tumours are characterized by a scanty blood supply, the vessels being few in number and very thin-walled, often consisting merely of an endothelial lining. Nevertheless authentic examples of mixed cell tumours have been described in which there has been an abundant vascular network.

Eggers describes a tumour (Case III) which "consisted almost wholly of massed epithelial cells; within the masses were cavities lined by flattened cells; cartilage or squamous epithelium were not found." Fry also records a case of a tumour entirely encapsulated, a large part of which consisted of a solid mass of cells of irregular shape, with no definite arrangement; a prominent feature was its extreme vascularity.

Small cysts due to degenerative changes are of frequent occurrence in mixed salivary tumours, and it is probable that in the case recorded above there had been a periodic leakage of blood from such an extremely vascular tumour into a small cyst, thereby increasing its size, and giving rise to the straw-coloured fluid contents and the deposit of blood pigment.

The above features lead the writer to conclude that the tumour was a mixed-cell tumour of the soft palate, with an exceptionally abundant blood supply, and containing a cyst of unusual size.

No attempt is made to discuss the etiology of this tumour, as there are numerous and excellent contributions by many authors available for consultation; and as McFarland[6] says, "Whoever in the face of these excellent contributions undertakes to add to the literature might well be called upon to apologize."

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DELAYED OPERATION FOR TRAUMATIC INTRA-CEREBRAL HAEMORRHAGE.

BY

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(With Special Plate.)

The mortality after operations for traumatic intra-cerebral haemorrhage is sufficiently high that it may be worth while considering whether delayed operation is more likely to be beneficial in such cases.

The following particulars of a case of head injury I recently operated on will, I think, be of general interest. During a quarrel a man, aged 30, received a blow on the left side of the head with a bamboo stick, at about 7 p.m. on April 20th, 1930. He was brought to the hospital at 8.30 o'clock the following morning in an unconscious state. He had a large contusion over the left side of the forehead, involving the eyebrows, eyelids, and the temple. Both pupils were contracted and equal, and there was no haemorrhage or cerebro-spinal fluid from the ear, nose, or mouth. His pulse was 62, small in volume, respirations 20 and shallow, and he was having involuntary micturition and defaecation. He remained in this state till April 24th, when he recovered consciousness, but was unable to speak, and was completely paralysed on the right side (face and limbs). He was still having involuntary micturition and defaecation. His pulse was 68, respirations 18; pupils both reacting to light, but left a little sluggish, and deep reflexes completely abolished on the right side. He was advised an operation, which he refused. He continued to be in the same state, and in spite of careful nursing he developed a small bedsore over the sacrum. On May 6th he started getting evening rise of temperature, and he was complaining of persistent headache. On May 17th he consented to be operated on. When under chloroform a U-shaped flap with apex upwards was turned down from the temporal region; a longitudinal fissured fracture, running from the supraorbital margin upwards, backwards, and outwards across the frontal and parietal bones as far as the parieto-squamous suture, was seen. The skull was trephined over the middle of this and a disc of bone removed. The anterior branch of the middle meningeal artery was exposed under the trephine circle and was found not to be damaged. There was a little oozing of dark venous blood from the anterior edge of this opening, and the circle was enlarged in this direction, the underlying surface being digitally explored; a few clots were expressed from the antero-inferior angle of this opening. As there was not sufficient evidence of extradural pressure to account for his symptoms, the opening was further enlarged towards the postero-superior angle and the underlying surface explored with the fingers. There was no evidence of accumulated blood-clot in this area. The dura was then opened by a crucial incision (after ligating the middle meningeal artery, as it was in the way) and the cortex was exposed. The surface was dull and bulging through the opening in the dura. A closed pair of artery forceps was thrust into the substance of the brain in the direction of the pre-central convolution, and on opening the blades a large quantity of altered blood-clot and degenerated and softened puriform brain matter was evacuated. The cavity was subsequently irrigated with saline, and at this stage the brain regained its colour and began to pulsate. The dura was then stitched up, and the wound was closed with a superficial gauze drain. He was put on regular doses of hexamine. His temperature came down to normal the next day, and when the gauze drain was removed a little pent-up blood-stained fluid was evacuated. On May 22nd slight finger movements were noticed on the right hand. His limbs were now supported on splints, the shoulder being kept abducted and the wrist dorsiflexed. On May 25th slight movements of the right leg were noticed. Sutures were removed on this day, and the wound was found to have healed by first intention. The patient by now had gained control over micturition and defaecation, and he was given daily massage to his paralysed limbs, morning and evening. On May 30th he spoke a few words. On June 8th he could walk with the help of a stick, although with jerky movements at his ankle, could move the fingers of his hand slightly, and was able to speak a few words; but he was absolutely unable to move his forearm or hand independent of support. On June 12th he was able to move his wrist and elbow, but his power was still very weak. On June 14th he was able to flex his elbow-joint voluntarily, and when the arm was raised up and supported his efforts to raise the arm above the level of the shoulder were noticed by slight contractions of the deltoid and spinati. On June 20th he was discharged from hospital, when he was able to walk well and speak, though slowly and with deliberation. He had completely recovered function in his lower limbs, and was able to use his upper limb with a slight weakness of the abductors and external rotators of the upper arm, and with inability to approximate his little and ring fingers. On August 1st he appeared in court, and argued his own case. His movements in the shoulder-joint are still restricted and weak. There is slight wasting of the muscles of the hypothenar eminence, and inability to oppose his ring and little fingers continues. His speech is slow, and there is a little hesitancy in it.

The photograph reproduced in the Plate shows the site of operation and demonstrates the patient's ability to raise the arm to the level of the shoulder, and also shows his inability to approximate the little and ring fingers.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AN UNUSUAL CASE OF STIFF KNEE.

(With Special Plate.)

The following case appears to be a unique example of "stiff knee," and there is, so far as I am aware, no record of a similar case in the literature of the subject. The rarity of the condition places it in the category of a museum specimen, rather than in the more valuable and more useful sphere of everyday work. Nevertheless it is worthy of being put on record, and therefore I venture to publish it as a radiological contribution to the study of stiff knee.

Rather less than a year ago I was asked to make an *x*-ray examination of a left knee-joint, which had become practically immobile in a slightly flexed position, and by the courtesy of the patient's doctor I was able to obtain the following history.

Mrs. H., aged 53, states that the earliest feeling of discomfort in her left knee was experienced about the beginning of the year 1926, and took the form of stiffness rather than of pain. Up to March, 1927, she was able to walk quite well, and to extend and flex the knee without any great discomfort beyond a feeling of stiffness at the knee-joint. In March, 1927, she underwent an operation for urethral caruncle, and she states that she was able to walk into the operating theatre in quite a normal manner, but on wakening up in bed from the anaesthetic she experienced an acute pain in the knee. This was the first occasion on which really acute pain had occurred. She remained

in hospital about a month, and the knee did not improve. At this time it was still possible to flex and extend the joint passively, but active movement could not be carried out. The condition of the knee was considered to be due to rheumatism, and was treated accordingly.

When she left the hospital she was unable to walk. Some months later her leg was put into a long splint, and was kept thus for a period of about seven weeks, with the knee-joint extended. When this splint was taken off, another one was applied with a foot-piece, and kept on for "weeks and weeks." When the second splint was removed she lay in bed for months, and was afraid to move her knee on account of pain. About April, 1928, the knee was *x*-rayed at another hospital, but apparently nothing definite was discovered. However, a diagnosis of rheumatoid arthritis was made. It appears that only an antero-posterior and a postero-anterior view of both knees had been taken. For a month or two before I *x*-rayed the knee, on November 28th, 1929, she had been able to walk about a little without experiencing much pain.

Clinically the knee presented no abnormal appearance, but any attempt to extend or to flex it further was frustrated by reason of its rigidity and on account of the discomfort caused to the patient. A slight degree of lateral movement could be obtained by placing a hand on each side of the knee while the foot was held between the manipulator's knees. (This movement can be obtained in a normal knee when the limb is slightly flexed and the thigh muscles relaxed.) A small amount of rotation could be produced by grasping the thigh just above the knee with one hand and rotating the tibia by gripping the ankle with the other. These movements, though limited in extent, indicated that no osseous ankylosis was present, and, as there was no marked evidence of contracture of the muscles, it was difficult to imagine what factor or factors could be held responsible for the stiffness of the joint. It was on these grounds that the masseur who had been engaged to attend to the patient decided to ask for an *x*-ray examination before proceeding in his endeavour to loosen the joint by manipulations. Fortunately for the patient she had been placed in the hands of a competent masseur of the modern school, whose training included an adequate knowledge of anatomy, physiology, and some pathology, as well as the methods of manipulation; she was thus spared forcible measures, which would have caused great subsequent pain without improving the movement of the joint, and which possibly might have been productive of considerable damage to it.

The radiograph revealed a condition which gave rise to great astonishment. Proceeding from the anterior surface of the external condyle of the femur a large sessile cone-shaped exostosis was seen, which had invaded almost the whole depth of the patella. The patella was, in fact, transfixed, and it was now easy to understand why the knee-joint was incapable of flexion and extension. The quadriceps could no longer pull the patella upwards, and flexion could only have been obtained by forcibly stretching the ligamentum patellae.

As it was a stereoscopic radiograph that had been taken, it was possible to say definitely from which condyle the exostosis arose, and it was also possible to see that the exostosis had actually entered the patella.

I made prints from two diapositives of the radiograph, one to show the actual size of the parts (Fig. 1) and the other to show the relationship of the bones (Fig. 2). In preparing the diapositives I have been able by carefully grading the light transmitted through the *x*-ray film to produce diapositives from which bromide prints have been obtained, which show up the details of the exostosis and the patella without sacrificing the visibility of the details of the rest of the joint.

At the present time (September, 1930) clinical examination reveals no difference in the appearance of both knees. The left one measures 18 inches in circumference as against 17 inches in the right. The left calf measures 17½ inches, and the right 17 inches. The patient walks with fair comfort, but in an attempt to make up for the shortening due to the slight flexion of the knee she is developing a talipes equinus, as the heel is raised up and the tendo Achillis is becoming retracted.

There is no doubt that there is some degree of contracture of the flexor muscles, otherwise it should be possible to extend the joint passively, as the fixed patella would scarcely prevent that. Since she is unable actively to flex or extend the joint, it appears that contracture of the flexor muscles is the cause of the slightly flexed position now assumed by the joint, and I think it is evident that the ultimate degree of flexion will depend on the extent to which the ligamentum patellae is able to resist being stretched.

I desire to express my indebtedness to Dr. D. R. Reid of Milngavie, the patient's present doctor, and to Mr. Thomas Kerr, the masseur. But for the acumen and assistance of these two gentlemen this interesting case would probably have gone unrecorded to the limbo of lost cases.

Glasgow. DAVID KYLE, M.A., M.B., Ch.B.

SUICIDE IN POST-ENCEPHALITIS EPIDEMICA.

WHILE it is recognized that suicide is liable to take place in encephalitis epidemica, examples are fortunately uncommon. P. K. McCowan indicated, in the *Lancet* in 1925, that "suicide is regarded as an extremely rare occurrence in epidemic encephalitis." He described in his article, however, three cases showing sequels of encephalitis in which attempted suicide was a feature of the psychosis. Frederick Roques has quoted a series of cases investigated by Professor A. J. Hall. Two of these patients threatened suicide, and a third made two unsuccessful attempts on her life. The case I here record was the last of a group of six or seven which were diagnosed in the district.

Mrs. H., aged 27, had an acute attack of encephalitis epidemica in March, 1924. The initial phase of her illness lasted for about five weeks. Diplopia, headache, lethargy, vomiting, and delirium were prominently marked. About a year afterwards the use of her left arm was impaired, and spasticity slowly advanced. A few months after her marriage in 1926 she gave birth to a healthy child, and sixteen months later a second well-developed baby was born. Both children have maintained their good health. Paralysis agitans appeared in the left hand, but the patient was capable of doing some housework. Salivation was extreme, and speech was slurring. Although her mental activity was slow there was no history of delusions or hallucinations. Depression was unusual. The post-encephalitic stage was aggravated at each pregnancy. Seven months ago the typical Parkinsonian syndrome developed. There was mask-like immobility of the facies and stiffness of the limbs. She committed suicide on July 7th by drinking a quantity of some disinfectant fluid.

The special interest of this case lies in suicide occurring in advanced Parkinsonism where there had been no earlier manifestations of great mental disturbance.

My thanks are due to Dr. V. X. Harcourt for the details of the original attack of epidemic encephalitis.

Castle Donington, Derby. T. McCOWATT MONTFORD.

RAYNAUD'S DISEASE.

A LADY, aged 45, came to me early in August with all her fingers and her thumbs of a waxy pallor, swollen, and very painful. A gangrenous patch was present at the end of the middle finger of the right hand, at the bottom of which bone could be felt. There were also small sores on the ends of all the other fingers except the little ones. She had very little power of movement of any of the finger-joints. There was the same waxy pallor and pain in the front half of both feet, but no sores. Her blood pressure was low, 120 mm., and the artery at the wrist soft. It was a typical case of Raynaud's disease.

I ordered her parathyroid (P., D. and Co.) 1/10 grain first thing in the morning on an empty stomach an hour and a half before breakfast, and 15 grains of calcium lactate with 7 minims of tincture of digitalis three times a day after meals.

Pain in the hands ceased after a fortnight, and the small sores at the ends of the fingers had healed. The swelling was also subsiding in the hands and feet, and the gangrenous patch was looking much more healthy. An ichthyol and zinc ointment was used for this. After five weeks the hands and feet were of a normal pink colour, the swelling had all gone, except in the right middle finger, and the patch had filled up and was covered with healthy granulations. Movements of the finger-joints were free, except for some stiffness in the terminal ones. After two months' treatment the gangrenous patch had completely healed.

The important part of the treatment has, I believe, been in giving the parathyroid on an empty stomach well away from food. In other cases, such as psoriasis, I have found parathyroid quite useless if given after meals, but very effective if given on an empty stomach.

Brighton. WALTER BROADBENT, M.D., F.R.C.P.

GLANDULAR FEVER.

THE following case is illustrative of the recent epidemic of glandular fever, and shows many departures from the typical textbook case.

A very fat girl, aged 16 years, came under my care on April 5th. When I saw her for the first time her symptoms were as follows: temperature was 103.4° F.; there were red, painless plaques varying in size up to a shilling on the right side of the face, neck, and shoulder; the tongue was coated, the pulse rapid, and the skin was dry. A week's history of illness was given. During this period she appeared to have had some constipation, slight cough, headache, and nose-bleeding. There had been some abdominal pain, but this was not very definite. On examination there was an entire absence of physical signs, except some doubtful rigidity of the right half of the abdomen. A tentative diagnosis of an illness of the typhoid group was made, and the temperature fell slowly within the next four days to 99°. Coincident with the lysis a few rose spots appeared on the abdomen. The original plaques also disappeared about this time. A Widal reaction was negative, and the stool and urine showed no typhoid bacilli. From now the temperature fluctuated between 98° and 99.5° for a fortnight, during which the patient complained only of debility. The pulse was very rapid, but it fluctuated considerably with excitement. About this time she was also seen by Dr. Stewart of the Hendon Health Department and Dr. Mack of Highbury, who agreed with the diagnosis of a mild enteric attack. At this period in the illness a swelling appeared in the right posterior triangle of the neck, of the size of a walnut, tender, freely movable, and non-fluctuating. This subsided under fomentations, but was soon followed by a similar, though smaller, lump under the left sterno-mastoid. On April 30th the temperature rose suddenly to 103°, accompanied by pain at the right base, but with no cough. Examination revealed impaired note and fine crepitations. Respirations were not increased. This new condition subsided only to reappear ten days later, with increased pyrexia. Seen by Dr. C. M. Wilson, a diagnosis of glandular fever was made, and this was borne out by a blood count, which showed a leucocytosis of 12,000. In the second week of May, since the pyrexia had not yet subsided, it was decided to give six injections of S.U.P. An injection daily was followed by rapid disappearance of all symptoms, and on May 20th the patient was apparently quite well. The spleen was never palpable, and the liver was not enlarged.

Although the patient was feeling ill she never lost her appetite, and it was difficult to believe when the temperature subsided that she had had a protracted febrile illness. The points of interest in this case are: the similarity to enteric infections, the absence of severe symptoms, the possible effect of S.U.P., and the congestion at the right base with pleuritic pain, but no cough. The cases that have been reported conform more or less to the above type, and are different from those described in the modern textbook, where prominence is given to the following characteristics: transitory and mild fever, general and early glandular enlargement, absence of rashes, and rarity of complications.

Golders Green. L. STUART WOOLF, M.R.C.P.

Reports of Societies.

DUST AND INFECTION.

AT a meeting, on October 21st, of the Section of Pathology of the Royal Society of Medicine, Professor E. H. KETTLE delivered his presidential address, taking for his subject the relation of dust to infection.

Professor Kettle said that the pneumonoconioses had received less attention than they deserved, for they played an important part in the life of mining populations. The disease in its most concentrated form was best seen in South Africa, where in the last twenty years £12,000,000 had been paid in compensation to silicotics and their widows and children. Since 1911 ten select committees of legislature and five commissions had considered the matter, and nine Miners' Phthisis Acts had passed through Parliament. The would-be miner now had to undergo a rigorous medical examination; none but picked men were accepted for employment, and these were subjected to medical examinations at regular intervals.

The Position in Great Britain.

In Great Britain, excluding coal miners, 35,000 workers were employed in the refractories industry, tin mining, the pottery industry, metal grinding, sandstone working, sand blasting, and other trades in which dust was a prominent feature. In these scattered industries it was difficult to arrive at comprehensive morbidity and mortality figures. It had been common knowledge for many years that these trades were dangerous, but the first scheme of compensation for silicosis only came into operation in 1919. There could be no doubt that the industrial pulmonary diseases would bulk much more largely in our social and medical legislation in the near future. In these different occupations the composition of the dust would vary, but all dangerous dusts contained free silica, the dioxide of silicon; the degree of harmfulness of a dust depended on the amount of free silica in it. Although the pulmonary disability induced by the different dusts had various names, such as "miners' phthisis" and "potters' asthma," the terminal pathological condition was always the same; death ensued from advanced pulmonary tuberculosis. Dust alone had produced disability and death in the past, but under modern industrial conditions dust disease really spelt tuberculosis. Pathologists were therefore required to decide, first, how silica affected the lung and how its action might be prevented or modified, and secondly, how it influenced the development of pulmonary tuberculosis.

Action of Silica on the Lung.

The characteristic feature of pulmonary silicosis was the presence in the lung substance of isolated nodules of fibrous tissue, varying in size, number, and distribution. Massive fibrosis was rarely seen nowadays, and usually tuberculosis supervened as a frank or modified infection. Until recently it was generally held that silicosis owed its harmful properties to its physical characters; the hard, sharp particles were supposed to damage the pulmonary tissue. For some years now, however, the view that silica became soluble in the tissues, and that its action was chemical rather than physical, had become generally accepted. It was also generally accepted that dust inhaled into the terminal alveoli underwent phagocytosis by the pulmonary macrophages and was transported to various parts of the lung. Presumably the silica gradually became dissolved, and in its soluble state was able to stimulate the growth of fibrous tissue. It was probable that fibrosis could only occur if silica was brought into direct contact with fibrous tissue, or with cells capable of forming it. Experimental investigations had for the most part done little to elucidate the process. L. V. Gardner had exposed animals to dusty atmospheres for eight hours a day over periods of two to three years, and had obtained important results, but other workers had not produced anything comparable with what occurred in man. Silica in harmful dusts was always associated with other substances, and the way in which these adulterant dusts might modify the main process could only be studied experimentally. Statistics were misleading; it had been stated that there was no silicosis in the mines of Cripple Creek, U.S.A., and it had been taught that adulterant dusts in that region prevented the accumulation of silica in the lungs. As a matter of fact, it had emerged at the recent International Silicosis Conference that there was plenty of silicosis at Cripple Creek. Again, since the incidence of tuberculosis in coal miners was actually less than that in the general population, it had been believed that no silicosis occurred among them, and it had been assumed that coal dust removed silica from the lung. But it was now known that silicosis did occur among coal miners; if the relative immunity of coal miners to

tuberculosis really existed, could it be because carbon was antagonistic to the tubercle bacillus? Professor Kettle said he had been unable to demonstrate any difference from the normal in their reaction to the tubercle bacillus in the case of animals saturated with carbon in attempts to block the reticulo-endothelial system. Dr. J. S. Haldane had considered that the elimination of dust particles by the phagocytes could be stimulated by non-crystalline dusts such as carbon, but experiments by Carleton and Mavrogordato did not really answer the question, and provided no evidence that coal either helped or hindered the action of silica.

Experiments by Intratracheal Injection.

During the past year Professor Kettle, working in conjunction with Dr. Hilton, had introduced suspensions of dust directly into the lungs of rabbits and guinea-pigs by way of the trachea. So far they had not been able to produce the typical fibrosis, and since an adequate quantity of dust must have been introduced into the lung it was clear that the time factor was of the first importance. Great stress had been laid on the immobilization of phagocytes by silica, but in their experiments there appeared to be no difference between the initial reaction and the subsequent behaviour of the phagocytes when carbon was used instead of mine dust. In variations of these experiments, using mixtures of amorphous silica and carbon, and mine dust and carbon, no sign was seen of the characteristic cleansing which had been described. Coal dust was the adulterant dust most often quoted, but the speaker had no reason to believe that other dusts played any specific part in protecting the individual from the effects of inhaled silica. The base-line for experiments on this point must be the production of characteristic silicosis in animals. It was possible that adulterant dusts might actually assist the action of silica in some cases. In one factory in which an abrasive powder, consisting of 75 per cent. of silica and 25 per cent. of sodium carbonate and powdered soap, was prepared, several cases of acute silicosis had been described following comparatively brief exposures to the dust. It was known that silica was soluble in alkaline solutions, and the explanation given for the rapid onset of the disease was that the inhaled alkali increased the solubility of the silica and enabled it to act more rapidly than usual. Professor Kettle had had the privilege of examining portions of the lung in two of the fatal cases occurring in this factory, and had found advanced tuberculosis in both; he regarded this as the basis of the whole condition, though it was more than likely that the infection was enhanced by the inhaled silica.

The Effect of Silica on Pulmonary Tuberculosis.

Nowadays industrial workers were seldom "choked," as it were, with dust, but they inhaled a certain amount of silica, which might produce a fairly advanced fibrosis of the lung. The chief danger, however, lay in the influence dust exercised on microbic infection, and especially on the tubercle bacillus. It was formerly supposed that it was the fibrosis induced by the silica which in some way predisposed the lung to tuberculosis, presumably from interference with lymphatic drainage. No experiments had been carried out in this country on the infection of the fibrotic lung, but fairly extensive observations had been made on the effects exercised by silica on tuberculosis in laboratory animals. Some years ago, working with W. E. Gye, Professor Kettle had demonstrated that interstitial inoculation of different forms of silica produced characteristic necrotic lesions, and that tubercle bacilli proliferated readily in these lesions in such unsusceptible animals as mice. Later he had been able to show that the active growth of bacilli did not depend merely on the necrosis of tissue, but was due to the actual presence of silica, and further experiments had confirmed this view. He did not wish to lay too much stress on his experiments, but they all pointed in the same direction, and he thought they were significant. In another series of experiments carried out with Dr. Hilton he had given intratracheal injections of silica to rabbits and guinea-pigs, and some weeks later had inoculated them intratracheally with living tubercle bacilli, arranging for an adequate number of controls. All the animals had died with pulmonary tuberculosis, but the silica animals had died weeks, or even months, before the controls. These experiments were also suggestive, but he was not prepared to say more than that. L. V. Gardner, however, had performed an experiment which appeared to him to be crucial. At Saranac there was a strain of tubercle bacilli ("R.1") which produced, in guinea-pigs infected by inhalation, isolated subpleural nodules in the lung, and massive involvement of the tracheo-bronchial glands. Macroscopic tubercles in other viscera practically never occurred. Resolution and healing ensued in eighteen months to two years, and the infection was practically never fatal. Animals inoculated with this bacillus were dusted with quartz for eight hours a day over a period of two to three years. After three to five months the bacilli in the pulmonary lesions took on a new capacity for growth; massive ulceration occurred in the lung, and the infection spread to the abdomen. This change was not attributable to an exaltation of the virulence of the bacilli, for subinoculations from the animals produced merely the form of tuberculosis characteristic of the "R.1" strain. It appeared to be due to an alteration of environment, depending on the presence of silica. How silica acted was still doubtful. Cummins had suggested that it destroyed complement, but to Professor Kettle the phenomenon appeared to be a cellular rather than a humoral one. Either the intracellular defensive mechanism of the phagocyte was injured by the silica, or the nutritional value of the cell protoplasm for the bacillus was enhanced. Working with cultures *in vitro* he had found that, although the total growth of the bacillus was unaffected, the lag period seemed to be shortened, so that an abundant growth was obtained in a much shorter time when silica was added to the medium. The experiments, however, were irregular, and so far he was not prepared to say that any success he had had was more that accidental. As regards the *in vivo* investigations, he did not think there could be any doubt about the main facts, although the explanation was still unknown.

Infective Silicosis.

In South Africa a simple silicosis and a silicosis *with* tuberculosis, or tuberculo-silicosis, were recognized. In addition, they described another condition—infective silicosis—in which infection was believed to produce changes in the reaction of the tissues to dust. The nature of the infection had not been determined in every case, but the tubercle bacillus was thought to be the most important organism. Radiographic examinations revealed larger and more irregular nodules of fibrosis than those found in typical simple silicosis, and on microscopical examination there appeared to be a greater tendency to necrosis. The lesions showed no histological evidence of tuberculosis, even when the nodules developed as the result of the combined action of the bacillus and the dust, but nodules from these cases inoculated into guinea-pigs gave rise to tuberculosis, although the bacillus appeared to be of an attenuated type. The opinion of South African workers at the recent conference was that silica might actually damage the bacillus so as to lower its virulence. It was difficult to reconcile this view with experimental data, which all went to show that the influence of silica was always favourable to the bacillus, but Professor Kettle felt that the experience of South African workers was so great that considerable weight must be given to their views.

RESEARCH IN CLINICAL MEDICINE.

At a meeting of the Section of Medicine of the Royal Society of Medicine, on October 28th, with Dr. R. A. Young in the chair, a discussion on research in clinical medicine was opened by Dr. J. A. Ryle.

Dr. Ryle said there was a prevailing dissatisfaction in this country with achievements in clinical medicine and the conditions on which they depended. The extension of laboratory tests had led to an uncritical attitude in diagnosis, while prognosis had not advanced greatly owing to neglect of the study of the natural course of disease. A reawakening of the philosophical attitude in medicine was needed. In a paper in the *British Medical Journal*

(March 15th, p. 479) Sir Thomas Lewis had pointed out that the work of the great clinicians was carried out upon actual sick persons. Research in clinical medicine should depend on the study of the behaviourism of man in disease. The method might be observational or experimental; Harvey and Darwin had used both methods. Clinical scientists had realized the value of coupling the two, but the developments of pathology and physiology had led to a division of labour. The busy life of the clinician left him little time for experiment. Both Sir Thomas Lewis and Mr. Wilfred Trotter[1] in their papers on this subject had seemed to imply that the observational method was at an end, but this was not the case. There were now better opportunities than ever before for accurate observation; the use of instruments of precision, such as the stethoscope and the electrocardiograph, was not an extension of the experimental method. Radiology and biochemistry merely offered improved means of observation. But the trial of new drugs and the invention of a new operation were experimental methods of research. The modern trend was the study of the personal, vital, and genetic factors, and the idiosyncrasies of man to disease. The older physicians had studied the phenomena of disease, and had made comparison with the findings in the cadaver; they had also paid superficial attention to temperament, heredity, and environment. They were limited by their ignorance of physiology, and by the absence of accurate methods of observation. A more minute analysis of morbid phenomena was now possible, but symptomatology was still largely unexplored; more accurate observation was required to determine the cause of nausea, heartburn, and vague abdominal pain leading to fruitless operation. In therapeutics the value of vaccines and endocrine therapy still required assessment. Psychology was a science founded on observation alone, and neurology had advanced by science and surgical experiment. At present, as Sir Thomas Lewis had pointed out, there was no adequate provision or encouragement for any young man to undertake research. He was seldom in a position to devote his entire time to it, and general practice left little leisure or energy for other pursuits. A research grant gave no security for the future. No one could study patients other than his own, but while so engaged a man should be relieved of financial anxiety. Sir Thomas Lewis had suggested that young men without experience of general practice should be encouraged to undertake research, but in the speaker's opinion it should be allocated to men who had practised; he would like to see a post created at the general hospitals for a man having access to all the patients in the wards, and with a few beds of his own. The appointment should be for five years, and be either renewable or leading to a post on the staff. A man with a wide early experience, and preferably with a grounding in philosophy and psychology, should be chosen. The Medical Research Council was prepared, it seemed, to help to solve the problem.

Professor H. Moore of the University of Dublin remarked that, until recent times, clinical research had depended on bedside observations and simple tests, which were correlated with post-mortem findings. Later, clinicians had come to think of disease in terms of physiology—that is, in terms of the living organism; more precise methods involving laboratory technique and the use of experimental animals were introduced, and training in the interpretation of results became necessary to the physician. As knowledge progressed, problems could no longer be settled by observation alone, and the laboratory became a necessary adjunct; the physician was the person to pursue the study of disease, provided he had access to both the patient and the laboratory. Acidosis, ketosis, and diabetic coma were conditions which had been elucidated by combining the work of laboratory and clinic. The discovery of insulin and of the liver treatment of anaemia were the work of the laboratory, but their value was tested and proved in the clinic. The majority of advances made in recent years had depended on the co-operation of the clinic and the laboratory. Research was most productive when it was carried out on the patient by men competent to use both clinical and laboratory methods, and where the clinic and the laboratory formed one synergic unit. The simple mode of approach was no longer effective, because of the increasing complexity of medicine. If funds were available to build new hospitals he would suggest that buildings should be constructed for the following purposes: first, the care of the sick; secondly, the study of disease in the patient by the co-ordination of all possible means; thirdly, the instruction of students, research workers, and nurses; and, finally, for the after-care and after-study of the sick. Whether a research worker should hold a whole-time or a part-time appointment was a matter for debate. There was much to be said for giving a man a reasonable tenure of a whole-time post, with obligation to deliver a few lectures and arrange demonstrations in his own subject, provided he had facilities for keeping his view wide and general. The purpose of medicine was to cure disease, and a man should not be allowed to make the means the end by devoting himself entirely to the scientific aspect. Those general practitioners who wished to pursue a definite line of research should also have opportunity to do so. The training of a research worker should include clinical and laboratory experience. He might begin with simple research under supervision, doing his own laboratory work and using animals; later he would be competent to advise on complex research. A body to organize and allocate research would be valuable. Appointments might be for a period of five years, and would in any case enhance the ability of the worker to diagnose and treat disease. Wherever possible, a research unit should be organized in hospitals, where the clinic and the laboratory might work in close co-operation.

Dr. Helen M. Mackay said there was no lack of ability among clinical research workers in this country, but there was an absence of facilities; we were advancing slowly, but undoubtedly there was much talent awaiting better opportunities. The needs of the clinical research worker were adequate material, assistance and sympathy from his fellows, and time—with the inevitable corollary of money—for thought, reading, and correlation of facts. Material was best investigated in institutions; for the general practitioner, controlled work was almost impossible. The worker must have experience and standing sufficient to make him a suitable person to hold a post, with beds allocated to him. The voluntary hospitals had done little in the past to further clinical research, and even looked unfavourably on a man who pressed for improvements in equipment and apparatus. The sympathy and assistance of colleagues, alone, was not enough; a research worker should have the support of the nursing and managing staff of the hospital. The lay public, not realizing the importance of research, were inclined to put obstacles in its way; much could be done by the press to educate public opinion on this point. The demands made by research on time and energy rendered few ready to undertake it at a disproportionately small income. The leisure of a young man was small, and whether he aimed at consultant or general practice all thought of research must be eliminated. A few scholarships were obtainable at £50 per annum for half-time and £350 for full-time service, and these were only given to men or women with post-graduate experience, many of whom had held a university lectureship. This should be contrasted with the minimum of £600 a year which had been laid down for the public health service. Moreover, there was no security at the end of the appointment. As in other fields, the first work done was seldom the best, and workers required opportunity for experience. In Austria research was an integral part of every university hospital, conducted by a full-time staff. In a town the size of Reading research of a high order was being conducted at a "kinderklinik" equipped with excellent facilities, including opportunities for animal experiment in the same building. In the speaker's opinion, clinical research workers should receive an initial scholarship to determine their suitability; but some permanency of tenure should be offered, and there should be hope of ultimate advancement. Whether the post was a full- or part-time one might depend on the conditions under which the candidate produced the best work. Where the value of research was appreciated such a scheme might become a reality.

[1] *British Medical Journal*, July 26th, 1930, p. 129.

Dr. F. Parkes Weber thought that until the medical profession in England set the example in research they had no right to call on the lay public for large donations. He advised the production of fewer textbooks on general medicine and the publication of more monographs, which would encourage research. He also advocated the organization of a library of pathological slides for the use of those who wished to make comparison of sections of disease taken from their patients. Dr. C. M. Wilson was strongly in favour of an extension of the unit system to clinical research. It was a mistake to regard the laboratory and clinic as divorced from one another. So long as an accurate answer could be given it mattered little where that answer was obtained. Dr. A. Eidinow put in a plea for the man who wished to do original research. Much work grouped under the heading of research was pure scientific investigation—such as the standardization of drugs—carried on by men who, whatever their training, were scientists, and not medical men at heart. He asked that some scheme might be devised to encourage the man who wished to do original medical research.

Dr. L. Findlay doubted whether the suggestions made by any of the speakers would have any effect. Every new invention opened a new field of research, and there was plenty to see if there were the men to see it. Research workers were born, not made, and genius flourished in adversity. No man was entitled to be put in the lap of luxury simply because he could perform accurate tests. Dr. C. W. Theobald thought it was ridiculous to expect British research workers to hold their own while the present system obtained. By the time a man had an opportunity for research he had lost the taste for it. A fundamental change was needed. Dr. J. Kingston Barton said that the object of medicine was to treat disease; it was impossible for a man to devote himself to clinical research to the exclusion of the practice of medicine. Dr. W. R. F. Collins remarked that the clinical researcher was faced with the problem of whether to go into practice or go into debt. It was impossible to dissociate the clinician and the laboratory worker. The clinician must have some idea of laboratory tests, but at present, if he spent half his time in the wards and half in the laboratory, he was looked at askance by his colleagues in both quarters. He would prefer that the system should develop along those lines, however.

In replying, Dr. Mackay said she would like to see people pressing for increased facilities for research at their own hospitals. Dr. Moore urged that some of the funds obtained by hospital sweepstakes should be dedicated to research. Dr. Ryle regretted that he had found the meeting as unproductive as he had feared it would be. If bacteriology, pathology, and physiology were to be endowed, clinical research should be given equal opportunities.

REGULATION OF THE OVARIAN CYCLE.

At a meeting of the Sheffield Medico-Chirurgical Society, held at the University on October 22nd, with the president, Professor Graham Simpson, in the chair, Dr. A. S. Parkes, Beit Memorial Research Fellow, University College, London, read a paper on the regulation of the ovarian cycle.

Dr. Parkes said that various lines of work had all tended to show that the activity of the ovary was regulated from some external source. It was found many years ago that the ovary of an immature animal grafted into an ovariectomized adult female immediately underwent development and began its morphological and endocrine cycle long before it would have done so in its original environment. This and similar observations demonstrated quite clearly that the functional age of the ovary was regulated by that of the soma. It was now well known that the number of follicles ovulating at a time was governed, not by the amount of ovarian tissue present, but by the amount available of some substance in the circulating blood. Periodic action of the oestrus-producing hormone could also be demonstrated after complete elimination of the cyclic structures of the ovary by exposure to x rays. The periodic mechanism, whatever it might be, was thus probably located elsewhere than in the ovary. Uterine experimental work carried out during the last few years had revealed an amazing mechanism whereby substances elaborated by the anterior lobe of the pituitary body activated the ovary. One of the anterior lobe substances was concerned with the maturation of the Graafian follicle and ovulation, while another was responsible for causing the formation of the corpus luteum from the shell of the ruptured follicle. The "luteinizing" substance administered to an animal with a quiescent ovary caused the follicular granulosa to undergo luteinization without the intermediate act of ovulation. The other substance caused the quiescent ovary to enter on a phase of follicular maturation, culminating in ovulation and the formation of the corpora lutea. In each case changes were observed in the accessory organs corresponding to the phase induced in the ovary and resulting from the stimulation of ovarian endocrine activity. The action of the substances was exerted solely on the ovary and thence on the accessory organs. Anterior lobe preparations had no effect in the ovariectomized animal. The discovery of the anterior pituitary substance had explained the nature of the stimuli responsible for evoking the different phases of ovarian morphological and endocrine activity, but little progress had been made in elucidating the means whereby the periodic activity of the anterior lobe hormones was organized. Presumably some kind of endocrine cycle existed in the anterior lobe, but attempts to obtain histological evidence of this had so far been abortive. In any case, whatever the cycle mechanism in the anterior lobe might be, it was necessary to suppose that it could be modified by such events in the accessory organs as pregnancy, during which prolonged luteal activity was found.

The paper was discussed by the President, Professor Leathes, Professor Phillips, Dr. Elizabeth Eaves, Mr. W. W. King, and Mr. H. Blacow Yates.

ENURESIS.

The opening meeting of the London Jewish Hospital Medical Society was held in this hospital on October 9th, when Dr. Leopold Mandel delivered his presidential address on enuresis.

After reviewing and discussing the various theories with regard to the etiology of this condition, he put forward a plea for closer co-operation between the practitioner, the paediatrist, the urino-genital surgeon, and the psychologist, with a view to solving a problem which he considered to be one of the most troublesome in medicine. He hoped that more attention would be paid to the relationship between the vegetative nervous system and the bladder, and advanced the view that the enuretic patient was an individual whose neuro-muscular micturition mechanism was not normally stabilized. Many factors which did not affect the normal child acted as adverse stimuli in the susceptible incontinent child. He suggested the following classification into five groups with a view to making the types more easily recognized clinically, and enabling approved therapeutic measures to be adopted: (1) Those in which some palpable physical irritating stimuli existed, such as worms, over-distension of bladder, or cystitis. Their treatment was obvious. (2) The hypersensitive, neuropathic, or nervy type, in which the instability was a symptom which might be regarded in the same light as other symptoms, such as cyclic vomiting, ketonuria, and vagotonia, etc., which were more commonly found in the nervy child. They responded to dietetic and medicinal measures, combined with readjustment of environment and gentle re-education. (3) The so-called psychopathic child, in whom the enuresis was more a behaviour complex, and the treatment required was for the most part psychological. (4) Endocrine dysharmony, particularly hypothyroidism, leading to a loss of inhibition. Thyroid in small doses was indicated, while pituitrin, by its tonic effect on unstriped muscle, was a good adjuvant. (5) The debilitated child, often convalescent from some illness. General tonic treatment was indicated. In all cases atropine or belladonna was the specific drug of choice, while in the management of the case patience and the closest co-operation between the doctor, the child, the parent, and the teacher were essential.

Reviews.

THE SCIENCE OF CHEMOTHERAPY.

The fact that *Recent Advances in Chemotherapy*,[1] by Dr. G. M. Findlay, is the first work published in this country dealing generally with chemotherapeutic agents and their application, may serve to indicate the scant attention British workers have paid to the development of this science. Not only does the number of chemotherapeutic agents discovered in this country compare unfavourably with the number discovered in Germany or in the United States, but the general ignorance about chemotherapy is so great that the term is often used as if it meant merely the study of antisyphilitic remedies. It is interesting to note, therefore, that these latter substances are disposed of in less than one-fifth of the volume under review, nearly the whole of the remainder dealing with the treatment of tropical and subtropical diseases caused by animal parasites. The importance of chemotherapy to our nation is obvious when it is realized that the prevalence of these diseases in the British Empire creates serious economic problems, and that the development of tropical and subtropical countries is largely dependent on their eradication or successful treatment.

The introduction of organic arsenicals in the treatment of syphilis still remains the most sensational discovery made in chemotherapy, but many of the recent advances in the chemotherapy of tropical diseases, though not so sensational, have equal if not greater importance, on account of the enormous number of sufferers concerned. For example, so great a part of the world's population is afflicted with hookworm disease that a campaign against this infection may demand the treatment of hundreds of thousands of patients. When drugs are used on such a scale any advance is important, whether it is towards a reduction in toxicity or an increase in potency, or a price reduction, or a greater stability. Judged by these criteria the application of carbon tetrachloride to the treatment of hookworm disease represents a very important advance, for this agent seems to be better in several respects than any drug previously used. Similarly, the pentavalent antimony compounds recently introduced for the treatment of kala-azar are effecting a considerable saving of life. Intravenous injection of tartar emetic reduced the mortality from over 90 per cent. to under 20 per cent.; this treatment was liable, however, to produce toxic sequels, and the application of pentavalent antimony compounds has resulted in a further reduction of the mortality to about 4 per cent.

In the treatment of malaria any advance, however small, is welcome. It is unlikely that the new drug plasmoquine will replace quinine, but it is more effective than quinine in its action on the sexual forms of the malaria parasite, and may therefore prove of great value in the sterilization of malaria carriers. Most significant of all is the fact that a method has been discovered by which the antimalarial action of drugs can be estimated experimentally on animals, and by its means a number of antimalarial drugs have been synthesized. It is reasonable to expect that in the near future drugs may be discovered having even greater potency than plasmoquine.

On the whole, the chemotherapy of bacterial infections is still unsatisfactory, and in the volume under review less than one hundred pages are devoted to the subject; but even here there have been a few successes, particularly in the treatment of leprosy, and, to some extent, in the treatment of tuberculosis, certain cases of which respond favourably to injections of sanocrysin.

Dr. Findlay has produced a readable survey of a difficult subject; his work is written from the medical point of view, the material being classified according to diseases, while the actual chemical detail is limited to a description of the structure of the more important products. More than two-thirds of the work is devoted to the chemotherapy of protozoal infections, the remainder being concerned with helminthic and bacterial infections and cancer.

[1] *Recent Advances in Chemotherapy.* By G. M. Findlay, M.D., D.Sc. With a foreword by C. M. Wenyon, M.B., F.R.S. London: J. and A. Churchill. 1930. (5¼ × 8¼, pp. viii + 532; illustrated. 15s.)

ORTHOPAEDIC SURGERY.

Not three years have passed since we noticed in these pages the eighth edition of Whitman's *Orthopaedic Surgery*,[2] and a copy of the ninth edition is now before us. As the number of pages has been increased by twenty-four and the number of illustrations by twenty-seven, we may safely assume that care has been taken to keep this standard textbook up to date. There have been no revolutionary or even striking innovations in orthopaedics since January, 1928, and therefore it is not to be expected that any great change would be noticeable in this work. Like some other books of the same kind it has its gaps. For instance, as we remarked the other day in a leading article on the treatment of fractured patella, it contains no reference to that subject. This is probably an intentional omission, as the treatment of fractures in general is deliberately excluded. It is, however, not easy to defend this omission from a work which includes the treatment of fractures of the neck of the femur, a subject which is so closely associated with the name and reputation of the author. Considerations of space have no doubt carried great weight, for an adequate presentation of the treatment of all fractures would involve doubling the size of the book. Yet if fractures are to be treated on orthopaedic principles, their treatment should be taught by orthopaedic surgeons, and Dr. Royal Whitman says in his preface to this edition that "orthopaedic surgery is concerned with bodily mechanics, with the prevention and correction of deformity, and with the conservation of the locomotive function."

INTERPRETATION OF DIAGNOSTIC AIDS.

There is an obvious opportunity for the volume issued by our esteemed contemporary the *Lancet*, and entitled *The Clinical Interpretation of Aids to Diagnosis*.[3] Laboratory tests and specialized investigations are now definitely established in the scheme of medical diagnosis, and everyone allows that they are often an essential part of a clinical inquiry. Not a few of them require a skill in technique that can be acquired and maintained only by individual training and continuous practice. Hence in these respects the practitioner has largely to rely upon the report he receives from his expert laboratory colleague. This report, however, is necessarily in many instances a highly technical document, having shades of meaning rather than a clean-cut affirmative or negative, and it is written in the vocabulary created by the new developments. Its full and exact significance therefore demands some skill in interpretation. The ideal arrangement, no doubt, is for clinician and laboratory worker to discuss the whole position in consultation, and, if opportunity offers, this is the procedure to be cultivated. Unfortunately opportunity does not always offer, and the practitioner is left to read the riddle as best he may. It is to meet this position that the present volume has been prepared.

Each of the forty-five sections included in the book is contributed by an experienced worker, and the discussion is by no means a severely technical or limited one. On the contrary, each topic means a short and readable chapter in which an attempt is made to show where clinical findings can be enlarged by particular tests and in what measure the results of the tests help the practical situation. Not all the sections are of equal value, and not all the experts will agree with all the conclusions. Yet it may be fairly said that the contributors have kept well in mind the purpose of the series, and that they offer substantial help to those who desire to estimate and appreciate the knowledge to be obtained from the various technical tests here discussed. Few practitioners nowadays doubt values of this order. Indeed, the tendency is perhaps to exaggerate them, and to conclude that, given such and such a laboratory finding, the diagnosis is concluded. Readers will find no support for any such interpretations in this manual. Rather they will recognize that in many instances an absolute answer is not possible, and that in any event the laboratory result is a fact to be

[2] *A Treatise on Orthopaedic Surgery.* By Royal Whitman, M.D., M.R.C.S., F.A.C.S. Ninth edition, thoroughly revised. London: H. Kimpton. 1930. (6 × 9½, pp. xii + 1085; 981 figures. 45s. net.)

[3] *The Clinical Interpretation of Aids to Diagnosis.* Vol. i. London: The Lancet Ltd. 1930. (Demy 8vo, pp. viii + 380. 10s. 6d. net.)

duly weighed in relation to other facts, and not the voice of an overriding and infallible authority. There are degrees and probabilities and limitations here as there are in the inquiry at the bedside. The one is to aid the other, not to supersede it.

We congratulate our contemporary on a scheme happily conceived and efficiently executed. Two small practical points deserve a word of recognition—namely, the interleaved blank pages for personal notes and the well-written summaries that precede the several sections; these summaries (by "M. H. K.") are indeed triumphs in the art of combining brevity with lucidity, and they serve well the purpose for which they have been constructed.

THE WRONG WAY WITH MOTHERHOOD.

There has recently been published a book by Miss Sylvia Pankhurst entitled *Save the Mothers*.[4] It deals with the problems of maternal mortality, and to some extent with those of infantile mortality. As a contribution to the scientific study of these difficult problems and to practical suggestions towards solving them the book is, however, of no value. We regret to say this the more because on page after page of the volume its author manifests a strong prejudice against the British Medical Association, based upon a very minimum of knowledge. It would be much pleasanter to disarm prejudice by praise if it could honestly be done. The best that can be said is that the book evidences a real zeal for the reform of unsatisfactory conditions, and an indiscriminate reading of much literature on the subjects with which it is concerned. The major part of the volume is made up of scattered statements culled from official and unofficial publications, of short tendencious quotations, divorced from their context, from books and articles by writers of greater or lesser importance, of brief records of maternity cases of a distressing character, some of them of considerable antiquity, and of pathetic reminiscences of the writer's childhood. Even if every separate statement set down in such a fashion were itself true, the final picture presented must tend to be, and in this case is, essentially false. There are, however, statements in the book which never have been, or are no longer, true; and logic is hopelessly lacking. As minor, though not unimportant, illustrations of the author's methods we may take two brief, but typical, examples. One hundred and ten maternity cases per annum are described as "an average of nearly three labours a week." It is stated that "The British Medical Association proposes that to provide an improved service for maternity the present national health insurance contributions should be increased by sixpence per week, the employer, the worker, and the Government each finding twopence." What the British Medical Association's scheme actually says is that "an additional contribution on behalf of the employer and worker together of 0.4d. per week for each insured person, with 0.2d. per week by the State, would provide all the money." An inability to do correctly a simple division sum, and a disregard for the significance of a decimal point are disqualifications for dealing with those important statistical aspects of the subject which are essential to its understanding.

Miss Pankhurst gives quite a false impression of what the British Medical Association scheme provides and entails. Indeed, it may be said in general that there is scarcely a single statement made throughout the book about the Association which is strictly true; and Miss Pankhurst, more in sorrow than in anger, discovers that the Medical Women's Federation is just about as bad. It is not worth while to pursue this matter or to expose the mistakes; but the depths of the author's ignorance of the objects and functions of the Association may be shown by one quotation. After quoting from one writer that "anyone who knowingly and unnecessarily" does certain things such as those which an entirely unrelated speaker said he had been told had occurred in a "high-class London nursing home" (with no untoward results, but this Miss Pankhurst does not mention), she goes on, "One may venture to suggest that the British Medical Association might be better employed in adopting disciplinary action towards such offenders than in striking Dr. Axham off its rolls for acting as anaesthetist to the famous manipulative surgeon." It ought not to be necessary to point out the distinction between the Association and the General Medical Council to a writer of whom her publisher says, "no one is better qualified than this author to present the facts." Miss Pankhurst does know of the existence of the latter body, but in the instance in which she mentions it she misstates its powers. Apart from such errors and misrepresentations the illogical and inconsequential nature of the book may be seen in that the only possible conclusion from one part is that every mother ought to have her confinement in a hospital, while the conclusion from another must be that the dangers of maternity hospitals are so great that no mother ought to be allowed to submit to them.

Miss Pankhurst is, however, not content to be merely contemptuous or critical of the maternity service schemes suggested by two Departmental Committees, by the British Medical Association, and by the Medical Women's Federation; she has constructive proposals of her own. Their practical value can be gathered from the following features which they present. Each maternity case is to be provided with a hospital bed from two weeks before the confinement till three or four weeks thereafter, and then with accommodation in a convalescent home for a further month, all this without any payment by the mother. There are to be sufficient whole-time salaried and pensionable midwives and specialist medical practitioners (preferably women) to allow of each being present throughout every confinement. Each midwife is to be trained for four or four and a half years free of cost to herself, and is each year, in addition to holiday, to be allowed a period for post-certification training. Each birth is to carry with it a cash maternity bounty of £10 to the mother, who would, in addition, receive during the weeks of her illness an enhanced sickness cash benefit, be provided free with all the nourishment required during pregnancy and suckling, and have the services of a home help, trained and paid entirely by the community. If the mother be a wage earner she would also have a weekly payment equivalent to her wage when employed, for five months, or longer, before her confinement, and for one year (or, if she apply for it, for five years) thereafter. Each doctor as well as each midwife would be subject to meticulous rules with regard to the conduct of their professional work, and would be subject to inspection to see that these were obeyed. Need more be said? The scheme is obviously fantastic as regards expense, is directly contrary to many things which both the medical profession and the self-respecting public rightly hold dear, and would involve a disastrous and complete divorce between the medical attendance given during pregnancy and maternity and that provided during every other contingency of life.

[4] *Save the Mothers.* By E. Sylvia Pankhurst. London: A. Knopf. 1930. (Cr. 8vo, pp. xiii + 216. 6s.)

HUMAN PARASITOLOGY.

Although it bears the new name *Introduction to Human Parasitology*,[5] this book by Dr. A. C. Chandler is actually the fourth edition of his *Animal Parasites and Human Diseases*. Under its old title the book was intended to appeal to a lay as well as to a professional circle of readers, but sales records showed that the general public did not greatly desire education in this subject, though the work seemed to be in demand as an elementary textbook on parasitology for medical schools. Much of the present work is taken verbatim from the previous edition, including some which could well have been omitted as being too popular for the circle of readers to whom the text is now addressed. Many of the additions, too, could usefully have been omitted as being too specialized for an introductory course in human parasitology. There seems to be no need, for example, to describe in detail parasites whose presence in man has only been reported once—and then doubtfully. There are now over three

[5] *Introduction to Human Parasitology.* By Asa C. Chandler, M.S., Ph.D. Fourth edition, rewritten and enlarged, superseding *Animal Parasites and Human Diseases.* New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1930. (Med. 8vo, pp. xiv + 655; 300 figures; 25s. net.)

hundred illustrations, many of them good, but the efficacy of most could be increased by reducing the amount of "stippling," which in some cases is employed to such an extent as to make the figure almost unrecognizable. The work covers the protozoa (including the spirochaetes), the helminths, and the leeches, as well as the parasitic and disease-carrying arthropods. It concludes with a useful list of periodicals and standard books on these subjects. There is an adequate subject index, but several valuable pages are wasted on a list of authors—without any reference to their papers. The text is easily followed, and some chapters—particularly that on hookworms—are very good. The book still remains the most useful introduction to human parasitology in the English language, but future editions could be rendered more useful by a judicious pruning.

NOTES ON BOOKS.

Of the eight main articles in the July number of the *Annals of Medical History*,[6] so successfully edited by Dr. Francis R. Packard, there are four which deal with allied subjects. The history of aphrodisiacs from the earliest times to the present day is traced with copious references by Mr. H. S. Denninger of Chicago. Dr. J. L. Miller of the same city writes on the history of syphilis, and arrives, in opposition to Karl Sudhoff, at the very definite opinion that there is not any evidence of the existence of syphilis in Europe, Asia, or Africa before 1493, and that there is strong presumptive evidence that it was introduced into Spain by the sailors of Christopher Columbus. Fracastorius and his poem on syphilis are described by Dr. D. W. Montgomery, who shows that this poem, which now might find difficulty in obtaining a publisher, brought affluence and European fame to its author. In his historical survey of gonorrhoea Dr. E. W. Hirsch of Chicago points out that the Jews were well acquainted with this disease, and that their prohibition of intercourse with a menstruating woman has been justified by the recent observation that the virulence of the gonococcus is then increased; the portraits of Neisser of Breslau and Ricord of Paris appear in this article, and are reproduced as the frontispiece and on the cover of this number. A very attractive and scholarly account is given, by Professor A. S. Warthin, president of the American Association of the History of Medicine, of the physician in the famous "Dance of Death," which represents the fear of death in the neurotic and psychopathic Middle Ages. Dr. Howard Jones sketches medical practice among the North American Indians when they first came in contact with white men, as is set out in Edna Kenton's work, *The Indians of North America*. What Stephen Girard, "mariner and merchant," did for Philadelphia in the great epidemic of yellow fever in 1793, and in subsequent smaller outbreaks, is proudly recorded by Professor Hobart Amory Hare of that city. Dr. Eugene J. Leopold of Baltimore gives an account of Aretaeus the Cappadocian and his original description of diabetes. There are a number of excellent reviews in this generously illustrated instalment.

In preparing the second edition of his textbook on *Vertebrate Embryology*[7] Professor W. Shumway has thoroughly revised the text, eliminated redundant technical terms, and introduced several new diagrams. The four parts of the work are entitled respectively: early embryology, organogeny, atlas of sections, and microscopic technique. The author deals with the subject by describing type embryos, choosing for this purpose the frog, chick, pig, and man. At the end of each chapter there is a useful summary and a list of works for further study.

A volume entitled *Psychoanalysis of the Total Personality*[8] is a translation into English of a monograph by Dr. Franz Alexander, based upon a series of lectures delivered at the Berlin Psychoanalytic Institute. The first part of the book represents an attempt to apply Freud's theory of the ego to the individual neuroses. More speculative are the elements contained in the second part, for here the author endeavours to further elaborate Freud's views in regard to the two classes of instinct—namely, the erotic and death instincts. Dr. A. A. Brill writes a prefatory note.

[6] *Annals of Medical History*. New Series, vol. II, No. 4, July, 1930. Edited by Francis R. Packard, M.D. New York: P. B. Hoeber, Inc.; London: Baillière, Tindall and Cox. 1930. (8×11½, pp. 351-452; illustrated. Subscription in Great Britain 45s. per volume of six numbers.)

[7] *Vertebrate Embryology. A Textbook for Colleges and Universities*. By Waldo Shumway, Ph.D. Second edition, thoroughly revised. New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1930. (Med. 8vo, pp. x+311; 196 figures. 18s. 6d. net.)

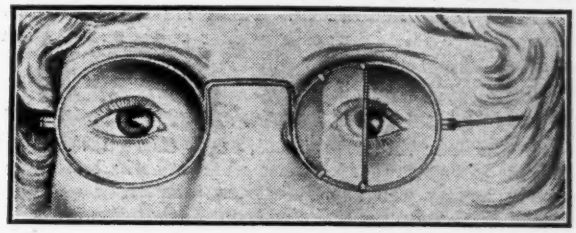
[8] *The Psychoanalysis of the Total Personality*. By Franz Alexander, M.D. Authorized English translation by Bernard Glueck, M.D., and Bertram D. Lewin, M.D. With a preface by A. A. Brill, M.D. New York and Washington: Nervous and Mental Disease Publishing Company. 1930. (Med. 8vo, pp. xx+176.)

PREPARATIONS AND APPLIANCES.

An Occluder for Squint.

Mr. A. Rugg-Gunn, M.B., F.R.C.S. (London, W.), writes: In the design illustrated herewith the principle of complete occlusion has been dispensed with. The occluder consists of two parts: a "half lens" of Chavasse glass, which covers rather more than the nasal half of the spectacle lens, behind which it is worn, and a rubber projection, which can be trimmed where necessary to fit into the inner aspect of the orbit.

Its advantages may be summed up as follows: (1) The occluder may be said to be practically invisible. (2) It permits

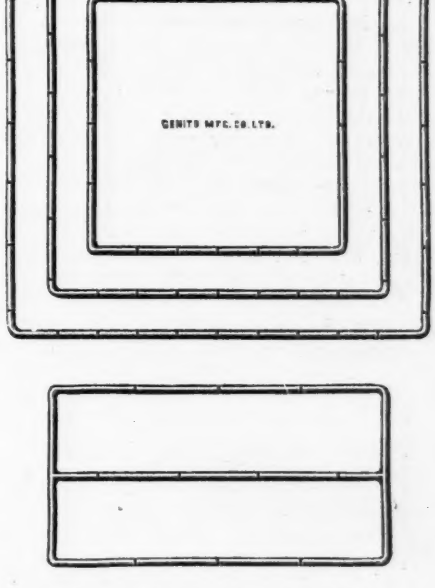


central vision of the occluded eye only in the position of relaxed convergence. (3) It emphasizes the relative equality of peripheral vision in the two eyes, encouraging more reliance on the squinting eye, and thus discourages its desire for suppression and overcomes its relative immobility. (4) It encourages a position of the visual axes in which images fall on relatively corresponding points. (5) By relaxing excessive convergence it may secondarily relieve accommodative spasm.

The makers of the occluder are Messrs. Theodore Hamblin, Ltd., 15, Wigmore Street, W., to whom my thanks are due for skilfully carrying out my suggestions.

Radium Needle Spacers.

Dr. Roy Ward (Radium Institute, London) writes: The radium needle "spacers" as shown in the accompanying figures are of great assistance in facilitating the accurate



disposal of radium needles or seeds throughout a tumour area. Squares of various sizes—say, 6, 8, or 10 cm.—are made of stout malleable silver wire and calibrated so that two opposite sides are marked off in centimetres and the other two in 1.5 cm. intervals.

The rectangular "spacer" is designed primarily for inserting needles or seeds at right angles to the skin surface. It will be noted that the markings on the middle limb are straddled. With these instruments a tumour area can be mapped out more quickly and more accurately than with callipers. They are both simple and inexpensive, and can be obtained from the Genito-Urinary Manufacturing Company, Devonshire Street, W.1.

SMOKE ABATEMENT.

Since John Evelyn issued his protest against the "Smoake of London" in 1661, numerous attempts have been made to deal effectively with the industrial smoke of cities. In 1853 an Act was passed to regulate the emission of black smoke, and this was incorporated in the Public Health Act of 1875. A few years later a special Act was passed for London, which sought to control the emission of smoke from furnaces and from steamboats on the Thames. The last Smoke Abatement Act (1926) removed the necessity for proving *black* smoke, and extended the powers of local authorities. These statutory provisions, however, have failed to achieve their object: smoke is still an intolerable nuisance. Apart from its blighting effect on public health, the annual expenditure in this country due to smoke has been estimated to be over £6,000,000.

Smoke Abatement Act, 1926, Section V.

The modern way of dealing with a civic enemy is to found a society and arm it with a journal. In the third number of the *Journal of the Smoke Abatement Society*—a body constituted last year by the amalgamation of the Coal Smoke Abatement Society and the Smoke Abatement League of Great Britain—some shrewd observations are made on the legislative methods of dealing with the problem. Its main theme is the confession of the Minister of Health that Section V of the Public Health (Smoke Abatement) Act, 1926, may be almost inoperable on account of the technical difficulty of framing model by-laws for the guidance of local authorities. This deadlock would seem to be worthy of Laputa.

The section referred to requires the provision in new buildings "of such arrangements for heating or cooking as are calculated to prevent or reduce the emission of smoke." No provision is made in the Act—as in the bill of 1924—to secure that the heating or cooking arrangements in new dwelling houses should also be subject to a constructional by-law. This amendment was rejected apparently on the ground that it would be inexpedient, in view of the national shortage of houses, to adopt any measure that might hinder their erection or add to their cost. Moreover, the meaning of "heating" is not precise. The official interpretation would seem to exclude the generation of heat for manufacturing purposes.

How entangled and thwarted the administration of the section must be was indicated by Mr. C. J. Allpass, vice-chairman of the Public Control Committee of the London County Council, in a paper read at a recent conference of the society. In London, he stated, a large number of new buildings are exempt from the constructional by-law made under Section 164 of the London Building Act of 1894; further, the scheme of that Act, in the opinion of the Minister, does not permit local authorities to require the submission of proposed "arrangements" or to decide upon their acceptance. Hence he concluded that the powers conferred on local authorities by Section V of the Act of 1926 are too narrow, especially in regard to the County of London, to enable really effective by-laws to be made.

Another criticism of the Act is that a statutory committee cannot be set up in London, since the enabling Act of 1875 does not apply to it. While various regional committees have been established to advise and investigate in different parts of the country, the only statutory committee is the Sheffield, Rotherham and District Smoke Abatement Committee. This consists of eleven members appointed from six constituent authorities, the medical officer of health for Sheffield acting as medical adviser.

Attitude of Industry.

Many owners of plant are obviously indifferent to, or ignorant of, the devices offered for the purification of their fumes. This impression is substantiated by the replies to a questionary addressed by a member of the society to the surveyors of a leading boiler insurance company whose business is stated to cover the whole of the British Isles. With few exceptions, little interest was reported to be shown in the movement, and serious attempts to abate the nuisance were undertaken mainly through fear of prosecution. In very few districts was there any evidence of marked improvement in the knowledge of boiler attendants regarding the principles of smokeless combustion. Imperative demand for fuel economy had led to some improvement in very large plants employing skilled and trained engineers. In the majority of cases, when authorities complained of the emission of black smoke, the responsibility was shifted to the fireman. Since *force majeure*, even to a slight degree, has been found to have a certain effect, the suggestion has been made that persistent negligence should be regarded as a criminal offence; and that protective legislation should be introduced on the lines of the Factory Act, bringing smoke abatement within the jurisdiction of the Home Office.

Smoke Abatement in U.S.A.

It is instructive to consider the effect of the practical measures that have been adopted by certain States in America to deal with smoke abatement. Figures quoted by Mr. H. B. Meller, head of air pollution investigation in the Mellon Institute of Industrial Research, Pittsburg, show that 130 cities with a population of over 30,000 have some ordinance designed to reduce smoke. This usually takes the form of provisions requiring the submission of plans and complete specification to the appropriate authority prior to the erection or construction of furnaces or chimney stacks in buildings used for trade purposes. Greater discrimination is evidently being shown in the selection and use of equipment and fuel: plant owners and operators, recognizing that "smoke means waste," are learning to co-operate in its abatement. In consequence, consistently better results are reported every year. The subject, Mr. Meller states, is largely a matter of education—a necessity referred to in the first annual report of the society for 1930, and in the report on smoke abatement issued by the Royal Institute of British Architects at the beginning of this year. He stresses the fact, however, that *visible* smoke is not the only agent in atmospheric pollution.

Atmospheric Pollution.

In this connexion the Department of Scientific and Industrial Research, which has published its fifteenth report,[1] for the year ended March 31st, 1929, gives some precise information of deposits of different elements of pollution as recorded at various observation stations in this country. Compared with the average, a reduction of total solids was recorded at nineteen stations, and an increase at nine during the period of its investigation. Half a dozen stations reported increased deposits of sulphates and tar. In the previous report the data referring to these elements were stated to be probably the most reliable as an indication of smoke pollution. The highest mean monthly deposits of tar and sulphates were reported at Newcastle-upon-Tyne, where the heaviest deposits of ash and carbonaceous matter (other than tar) were also recorded. Taking the general average figure of each station as a basis of calculation, the highest deposits of tar and sulphates were recorded at Leeds and Huddersfield respectively. During the year an inquiry was instituted by the Research Committee into the problem of measuring sulphur impurities, and some evidence was obtained that sulphur trioxide may not be a normal constituent of the atmosphere, appearing only during fog. From the results of this investigation it is hoped to design an apparatus suitable for the routine determination of the amount of sulphur in the air.

Medical Aspect.

A consideration of the smoke nuisance from legislative and scientific aspects may fittingly conclude with a reference to its deleterious effects on human life, especially in encouraging and aggravating disease, as in tuberculosis. This aspect of the matter is referred to by Dr. W. M. Willoughby in his annual report for 1929 as medical officer of health for the City of London, in which he also emphasizes the danger to health of suspended impurities retarding the evaporation of fog. Much of the damage and discomfort in the City of London he attributes to domestic smoke caused by burning household coal, and he suggests that a remedy may be found in smokeless heating by using electricity, gas, or a smokeless solid fuel, with proper regard to ventilation.

[1] H.M. Stationery Office. 3s. 6d.

J. S. MANSON & FERGUS R. FERGUSON: "DECEREBRATE RIGIDITY" IN MAN.

Longitudinal section of Brain of A. B. showing tumour and softening.

A. RONALD: CYST OF THE URACHUS.

FIG. 1.

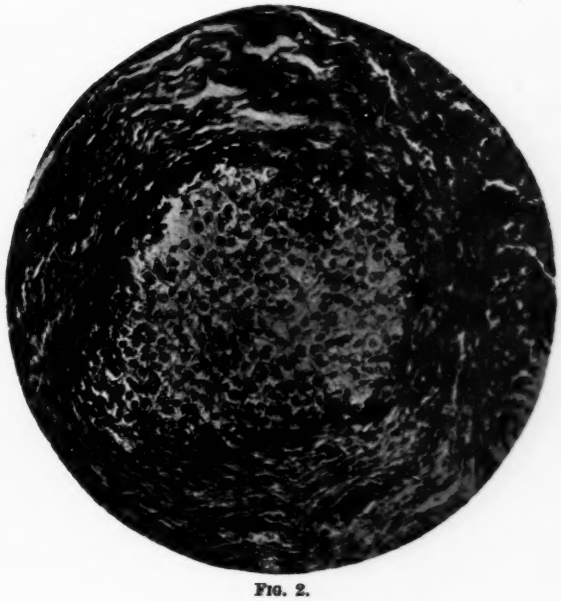


FIG. 2.

UNIV. OF MICH.

FIG. 1.—The stomach of Case I before treatment.

FIG. 2.—The stomach of Case I after 2 months' treatment.

FIG. 3.—The stomach and duodenum of Case IV before treatment showing filling defect of lower part of stomach and duodenum. Palpation failed to make any difference.

FIG. 4.—The stomach and duodenum of Case IV after 2½ months' treatment. The stomach and duodenum now fill well.

FIG. 5.—The stomach of Case V before treatment. Note the antral filling defect in the position where there was a palpable tumour.

FIG. 6.—The stomach of Case V after 2 months' treatment. Note the well filled antrum. No tumour could be palpated.

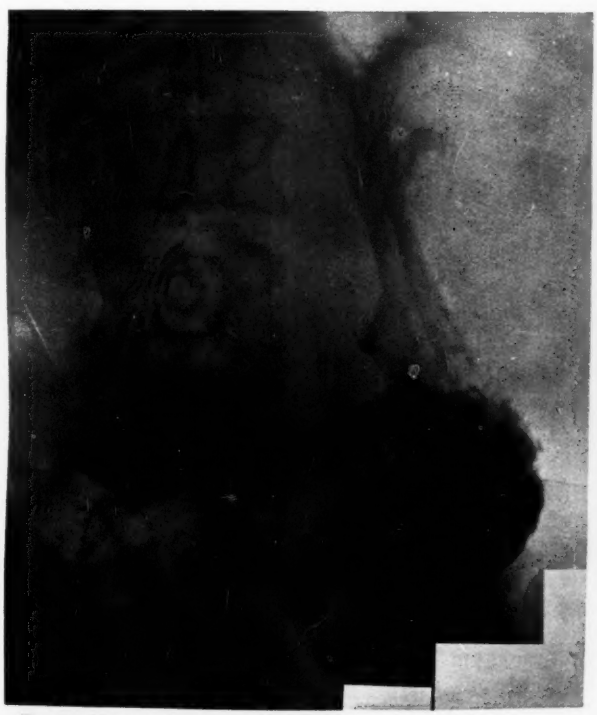


FIG. 7.—Stomach of Case VI before treatment. Note the lesser curvature ulcer.

FIG. 8.—Stomach of Case VI after 2 months' treatment. The ulcer on the lesser curvature has healed.

UNIV OF H.

J. E. G. McGIBBON: CYSTIC TUMOUR OF THE SOFT PALATE.

D. K. SABHESAN: TRAUMATIC INTRA-CEREBRAL HÆMORRHAGE.

DAVID KYLE: PATELLA TRANSFIXED BY EXOSTOSIS FROM FEMUR.

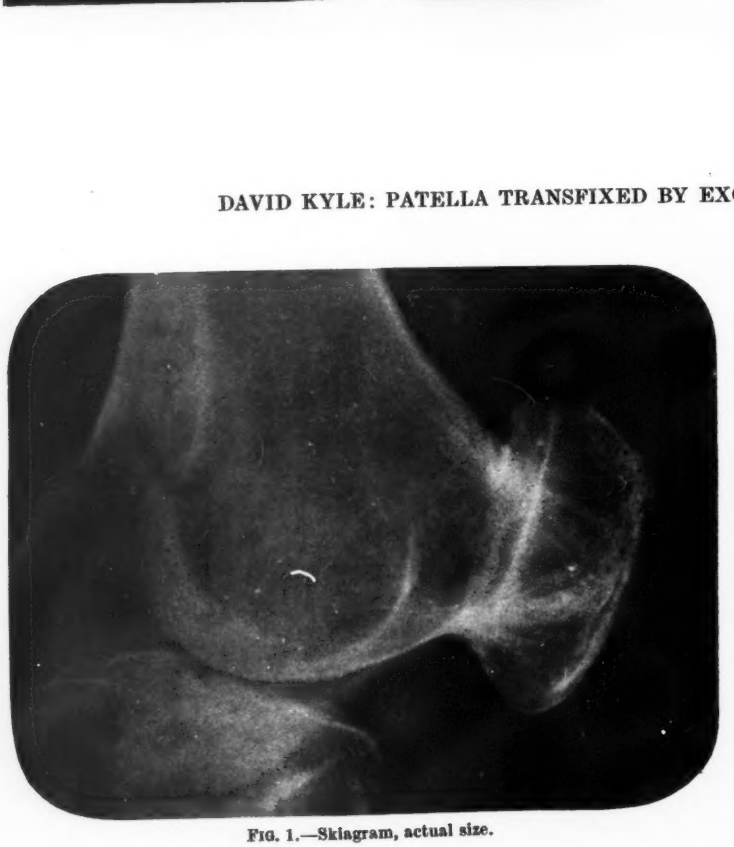


FIG. 1.—Skiagram, actual size.

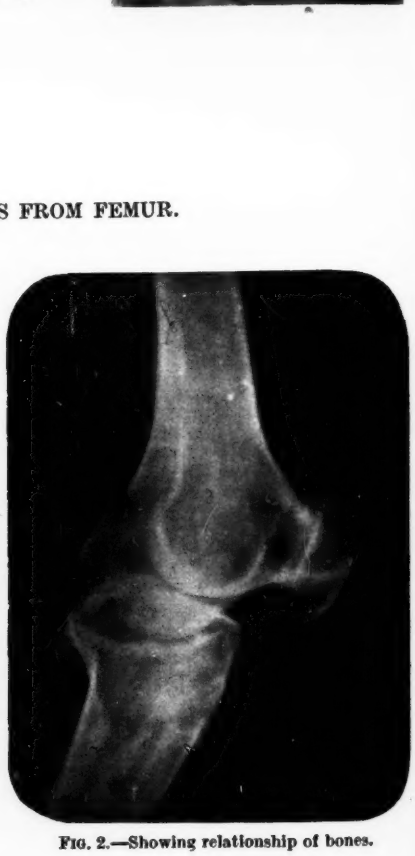


FIG. 2.—Showing relationship of bones.

British Medical Journal.

SATURDAY, NOVEMBER 8TH, 1930.

THE DEVELOPMENT OF MENTAL HOSPITALS.

At the first International Hospital Congress, held in Atlantic City last year, Dr. George W. Henry, director of laboratories, Bloomingdale Hospital, gave an interesting account of the development of hospital care and treatment of mental disease in America. The text of his address has now appeared in the *Proceedings* of the Congress.[1] He points out that in the period in which the early migrations to America were taking place Europe had not yet begun to emerge from psychiatric mediaevalism. At this period institutional care was provided by gaols, workhouses, and pesthouses, and by abandoned monasteries which had been converted into asylums. Such treatment was fast becoming the worst in the history of the civilized world, and it is no wonder that many of the afflicted preferred to wander about the country, lured or driven here and there by invisible forces, and dependent upon the charitable for sustenance. The early colonists brought with them, therefore, the deeply rooted superstition of the layman as well as the gross misconceptions of physicians regarding the mentally sick. They were further handicapped by poverty, the rigours of pioneer life, infrequent communication, and the necessity of depending upon their own resources. They were fortunate, however, in being less bound by tradition, but their subsequent history indicates that they were not so free of the past as might be expected, and that they were subject to the same errors and guilty of the same inhumanities as were their European brethren. Ideas of demoniacal possession still held sway, and near the close of the seventeenth century in the town of Salem fifty-five persons were tortured and twenty executed as witches. Some of the insane were confined in workhouses or gaols, and those who became violent were kept in cages. The feeble and helpless were distributed at public auction to the lowest bidder for their care.

It is a relief to turn from these barbarous methods of dealing with the insane and defective, and to follow Dr. Henry in his account of the gradual improvement in the methods of dealing with mental illness. It was only in 1751 that the law recognized insanity as an illness, and established the Pennsylvania Hospital "for the relief of the sick poor and the reception and cure of the insane." Dr. Henry pays a generous tribute to the influence of Henry and Samuel Tuke in stimulating the beginning of a new era in the treatment of the mentally sick. The kindly human interest which these two men had in their patients, and their desire to aid others, had a direct influence on the development of hospital care in the United States, and led to the establishment of the Friends' Asylum for the Insane and Bloomingdale Asylum—"two living monuments to the Tukes, which have never ceased to adhere to the ideal of moral treatment, and have contributed greatly to raising the standards of institutional care in the United States." In 1840 there were only eight public and four private hospitals for the care of the insane in the United States, the majority of the mentally sick being in poorhouses or in houses of correction. At this time appeared another champion of the cause of the insane, a woman of great strength of purpose and of untiring energy. Dorothea Dix had been compelled to retire as a school teacher because of recurring attacks of tuberculosis, but in 1841 she began to give religious teaching to female prisoners. She found the conditions so shocking that she decided to make a personal investigation of other institutions. She was peculiarly gifted in being able to discern fundamental defects, in being governed by principles of action which were beyond criticism, and in not being distracted by local or petty circumstances in attaining her goal. During the forty years she devoted to this philanthropic work she was instrumental in founding or enlarging more than thirty State institutions for the proper custody and right treatment of the insane. Within a few years after Miss Dix began her investigations signs of awakened interest in the mentally sick began to appear. In 1844 the "Association for Medical Superintendents of American Institutions for the Insane" was established, and the *American Journal of Insanity*, first published in that year, became its official organ.

Similar developments were taking place in this country about the same time. In 1841 the Medico-Psychological Association was formed, under the chairmanship of Dr. Blake of Nottingham, and in 1854 Dr. A. J. Sutherland was elected as the first president, and the *Journal of Mental Science* made its initial appearance. Generally speaking, it may be said that psychiatric developments in this country ran an almost parallel course with those in America. Thus the establishment of a specially equipped pathological laboratory, under the direction of a pathologist of recognized ability, at one of the State hospitals, was announced in the year 1895, the same year that Sir Frederick Mott was appointed pathologist to the London County Council asylums, and director of the pathological laboratory which had been established at Claybury Asylum for the purpose of research in mental diseases. Mott was a great physician as well as a pathologist, and his impressive researches exerted a profound influence upon the development of psychiatry in this country. His aims were essentially practical, and his work in relation to dysentery in asylum patients alone fully justified his appointment. The American innovation was not at first very fruitful in results, because the investigations carried out were too far removed from clinical problems. When failure had become evident the work at the institute was reorganized under the direction of Adolf Meyer, and with his advent in 1901 began a new era in institutional care and a new orientation to the problem of mental disease. His teaching, which requires that all factors —hereditary, environmental, constitutional, physical, social and economic, conscious and unconscious—that have contributed to the life situation, should be evaluated for the purpose of ascertaining the extent to which any or all of these factors may be modified, and of rendering assistance in a better adaptation to the environment, undoubtedly suggested a new outlook on mental disease.

Psychiatry no longer deals with fanciful abstractions, but with very real human problems. During the last few years, Dr. Henry observes, psychiatry has become greatly socialized through practical applications of knowledge acquired through the study of mental illness. Psychiatrists are now engaged in the habit clinics of the pre-school age, in child guidance

[1] *Proceedings of the International Hospital Congress*, Atlantic City, New Jersey, June, 1929. Paris: 2, Avenue Velasquez. (Pp. 300.)

clinics, in schools and industry, in the study of criminals and epileptics and the feeble-minded, as advisers of the courts, and as consultants in general medical and surgical practice. This wider recognition of the field of mental disorder has led to a realization of a need for increased flexibility of arrangements for dealing with it. In addition to the public institutions for the psychotic patients, there is a need in the future for the development of psychopathic hospitals for patients suffering from transient, though perhaps severe and acute, psychotic episodes. We have in mind the kind of patients now admitted to the observation wards of infirmaries where the facilities for treatment are generally recognized as falling short of modern ideals. Overcrowding and the vision of prophylactic therapy have been potent factors in the remarkable psychiatric developments of recent years in America. Dr. Henry states that at the present time it would be impossible to care for the large numbers of mentally sick persons if it were not for the modern psychopathic hospitals and clinics in the cities, and no doubt the future will show similar developments in this country. Equally important are the social service organizations, such as the After-Care Association in this country, for the guidance of the large number of patients who are being discharged from public institutions.

It is undoubtedly both interesting and encouraging to trace the gradual development of our conceptions of mental disease and its treatment. The progress made in recent years should act as a stimulus for increasing endeavours in the spheres of research, treatment, and care; for it cannot yet be said that psychiatric knowledge is sufficiently precise and clear-cut to enable suggestions to be made which are capable of effecting any striking diminution in the already considerable incidence of mental disorder in the community. The problems of the psychiatrist are probably the most obscure—and possibly the most important—in the whole of medicine, and for this reason no efforts should be spared in seeking their solution.

THE STUDY OF EPIDEMIOLOGY.

At the annual meeting of the American Medical Association, held in Detroit last summer, an instructive address on "Neglected opportunities for epidemiologic study" was given by Dr. E. L. Bishop, State Health Commissioner of Tennessee.[1] Dr. Bishop's contention is that golden opportunities of study are wasted because, on the one hand, the connotation of epidemiology is so often limited to the control of acute diseases in epidemic form, and, on the other, it is thought that only specialists with awe-inspiring knowledge can hope to discover anything. Hence, little of epidemiological importance is expected from field workers in local health services. Dr. Bishop points out that in fact some of the most important of epidemiological researches were carried out by practising physicians. Budd, one of the great pioneers, was a provincial physician (like his master Bretonneau), and rightly pointed out that a country physician might have better opportunities for epidemiological observation than his town colleague, who, living—epidemiologically speaking—in a dense wood, could hardly see the trees. Similarly, local health officers are in a better position to undertake natural history studies of herd sickness than officials of a central authority, who may be forced so to spend their time that the sneer occasionally directed against them, that they are mere "office epidemiologists," has a point.

Dr. Bishop has remedies, such as raising the status and increasing the financial resources of local health departments, which are excellent in their way, but the problem is rather more complex than he suggests. He remarks that epidemiology "has for its major weapon specific items of information which it obtains from other distinct specialties, notably bacteriology, immunology, pathology, and statistics, and its function is the collection and analysis of these various specialized items of information, and finally the correlation of these items in such a way as to offer the broadest possible perspective with regard to the nature of the disease." We are by no means prepared to agree that this is a complete statement. Such men as Snow and Budd, whom Dr. Bishop holds up as exemplars, were primarily clinicians, and his specification omits what to them was of the essence of the matter in hand. Still, what he does demand is a rare endowment—namely, the ability to co-ordinate, to set out in proper perspective, data gathered in various ways by experts, and described by them in what Mr. H. G. Wells has called "the muffled and highly technical language of the really careful 'scientist.'" This implies not only some knowledge of the several processes of technical investigation, but that kind of mental attitude which characterizes a really competent judge. Does the current medical education of either America or this country encourage the judicial frame of mind? Professor H. R. Dean, in his valuable address which we printed in our Educational Number on September 6th, and some of our correspondents on the subject, are not altogether satisfied with the general education of the medical student. Professor Major Greenwood, in his recent address to the Section of Epidemiology and State Medicine of the Royal Society of Medicine, is still more pessimistic. The gravamen of the critics is that we are turning out young people with much special knowledge but little culture; technicians, not educated men. It looks as though Dr. Bishop were stimulating demand for a supply which is small and perhaps decreasing. This defect is not peculiar to medicine. "Our present difficulty," wrote Professor Watson in his life of Bishop John Wordsworth, "is that our students often attain to technical dexterity without acquiring the mass of knowledge which is needed if their skill is to be profitably employed." In other words, they are technicians, not men of liberal education.

It is easy to point out a weakness; very hard to find a remedy. Technical proficiency can be tested with reasonable ease. If one demands that the student shall know "something about eyes," one can make reasonable sure that he *does* know "something about eyes," but it is not so easy to distinguish, by an examination test, between the cultivated intellect and the clever word-spinner. We might, like the French, profitably insist upon a higher standard of literary attainment in professional examinations; indeed, it is our duty to do so; but many men, medical and lay, who write well, reason ill. However, it is all to the good that attention should be directed to the fact that there is a demand for educated men rather than technicians in our profession; for nothing could be more disastrous than the belief, not confined to the field of epidemiology, that intellectual salvation is to be found in narrow specialization, and that the apocryphal surgeon of the last century, who, on seeing a physician enter his wards, said to his dressers, "Thank God, gentlemen, I know nothing of medicine," was a really wise man.

[1] *Journ. Amer. Med. Assoc.*, August 23rd, 1930.

THE EDUCATION OF MYOPES.

ONE of the signs of the times is the care taken by statutory educational authorities of the children committed to their charge. It is no longer thought sufficient to provide one standard form of education applicable to all children, long and short, bright and dull. As a result of the lifelong efforts of Miss Charlotte Mason, founder of the Parents' National Educational Union, there is a growing appreciation of the fact that the child is an individual. Our forefathers recognized this, so they picked out those they judged fit to be educated. The risk of mass production in educational method came only when it was recognized that all children benefited by education, and the decision was made that all should receive that benefit Nowadays, educational and physical grading is provided for. Special attention is paid to vision and its defects. There are admirable schools for blind children throughout the country with adequate accommodation, owing to the reduction of the incidence of blindness among the children. For over twenty years provision has been made by some of the larger educational authorities for children who are not blind but whose sight is too bad for them to be allowed to risk their following the normal curriculum. Most of such children are myopes. For them myopic or sight-saving classes have been established in many countries. The purpose of these classes is twofold: (*a*) to provide a suitable form of education with a minimum of risk of eyestrain; (*b*) to endeavour to stay the progress of the myopia by improved conditions. The variations in the state of myopia over periods of time in young patients have been the subject of several records. A collection of 100 cases was made by Mr. Priestley Smith[1] and reported to the Annual Meeting of the British Medical Association in 1901. In his paper is a remarkable graph showing the variations of the myopia over periods of five years; these were taken from his private cases. In 1913 Mr. Bishop Harman published[2] an analysis of 300 cases of high myopia in children in the London County Council myope classes. He gave a graph on the lines of that of Priestley Smith, which he thought showed that the average increase of the myopia was rather less in the London cases. There has lately been published, by the school medical officer of the East Ham Education Committee, a report on myopia by Mr. C. L. Gimblett,[3] based upon 170 cases treated in the ophthalmic clinic of that authority from 1923 to 1929. After giving an account of the conditions attending myopia, he considers its incidence as affected by sex, age, heredity, general sickness, school conditions, scholarship work, and the degree of defect. Among his conclusions the following may be cited. Myopia never gets better. All our efforts are directed to stop its getting worse, which tendency is at best only partially arrested, as is seen by the upward tendency of the curves of fourteen cases followed up for some years. Only one case of "congenital myopia" remained stationary, and that was true to type. In seven cases it was specially recorded that the onset of the myopia was preceded by a period of poor health and rapid growth. Mr. Gimblett discusses the education of these children, and pays tribute to the myope classes initiated by Mr. Bishop Harman. He states that the first of these was established in London in 1915, but the correct date is 1908. Mr. Harman gave an account of the experimental working of the first of these classes at the London meeting of the Association in 1910.[4] West Ham started one of the classes for twenty children in 1928. A description is given of the working of the class. Mr. Gimblett records that the myopes under his observation in the elementary schools, even when given "easy treatment," or "oral teaching" under constant supervision, showed an increase of 0.4 dioptre a year, whereas a careful analysis of 150 cases in the London County Council myope classes showed a rate of progress of 0.2 dioptre a year. The paper is issued in official foolscap form, and with a wealth of charts and tabular matter that will make the editors of scientific journals covet the resources of a borough council.

[1] *Ophth. Review*, 1901.
[2] *Trans. Ophthal. Soc. U.K.*, 1913, p. 202.
[3] County Borough of East Ham Education Committee. Appendix to the Report of the School Medical Officer for the year 1929. *A Report upon Myopia*. By Charles Leonard Gimblett, M.D., M.R.C.P., F.R.C.S., Ophthalmic Surgeon to the East Ham Education Committee, 1923-1929.
[4] *British Medical Journal*, 1910, ii, p. 1320.

READMISSION OF WOMEN STUDENTS TO KING'S COLLEGE HOSPITAL.

ON the recommendation of the medical board, and by a unanimous vote of the general committee, King's College Hospital, London, has decided to readmit women students to its medical school. They will be admitted, in limited numbers, from October next, the beginning of the school year. Mr. C. E. Bedwell, the house governor, states that the action taken by King's College Hospital in 1928, whereby women students were excluded, was simply a protective measure, because it was feared that the closing of other hospital doors to women might result in an undue invasion of women at Denmark Hill; it was never regarded as an irrevocable step, but only as temporary and experimental. The objections to co-education which have been urged in some quarters, such as the supposed embarrassment felt by professors in teaching certain aspects of medicine to mixed classes, or the distraction of men students by the introduction of the feminine element, have not been experienced at King's College. This action brings the number of London hospitals which admit women medical students up to three. The Royal Free Hospital (London School of Medicine for Women) admits women only, and in addition University College Hospital admits women to a limited number of vacancies, not more than twelve each year, making between thirty-six and forty-eight women studying there at any one time. Some of the great teaching hospitals of London have always barred women students; in others the ban has been recently imposed, and in some of these a few women students who joined earlier are still working out their time. London is more conservative in this respect than the provinces, where co-education is the general rule. From statements made in the press by those entitled to speak for other teaching hospitals, it does not appear that the example of King's College Hospital is likely to be followed immediately, but the action of King's gives point to a remark in our recent Educational Number that such a state of affairs as the ban upon women in the London medical schools can only be temporary.

NATIONAL INSTITUTE FOR THE DEAF.

THE National Institute for the Deaf (formerly the National Bureau for Promoting the General Welfare of the Deaf) has issued its sixth annual report, which gives an illuminating description of the efforts that are being made in this country, by propaganda and practice, to promote the welfare and interests of the deaf, including those whose sense of hearing has become deficient through accident or disease. Under the direction of the committee of the institute a number of regional associations have been established with the object of ascertaining the medical, educational, and industrial requirements of deaf persons within their areas, so that the services of existing agencies may be made as complete and effective as possible. Associations have been organized in the northern, midland, eastern, and western counties of England and in Scotland; associations for London and the Home Counties are expected to be formed at an early date. Besides assisting and co-operating with the various local institutions and societies, whose independence is being preserved, these associations take a particular interest in the prevention of deafness in so far as it can be mitigated or cured by ensuring

prompt treatment—possibilities which the report states are much more frequent than is generally supposed. The hardships which confront the deaf in obtaining employment and in adjusting themselves to modern industrial conditions are other problems which the committee intends to investigate more extensively by means of its regional associations. Another matter of national importance is the teaching of lip-reading, not only to pupils in schools for the deaf, but to adults who have lost their hearing totally or partially in later life. A proposal has been made to found a centre for instruction in this subject which would also be used for the training of teachers. While the committee is not directly concerned with the actual work of schools, it supports their claim for adequate educational opportunities. Most deaf children at present have no opportunities of receiving further education after they have left school at the age of 16. It has long been recognized by those who are interested in the education of the deaf that no means exist whereby parents, who cannot afford to pay the fees of private schools, may obtain secondary education for their deaf children, however qualified they may be to take advantage of it. A scheme for a secondary school, which will provide for the deaf the opportunities available to the rest of the population, has been prepared by the committee, and the hope is expressed that financial assistance will be forthcoming to put it into operation. This subject is to be considered at a conference to be held at University College, Gower Street, W.C., on November 12th, at 2.30 p.m., when the report of the committee on the higher education of the deaf will be presented. In a speech supporting the aims of the institute, Mr. Stanley Baldwin recently deplored the widespread indifference shown towards the feelings of the partially deaf, who were made more sensitive of their infirmity by the ill-concealed reluctance of people to speak to them. He attributed this lack of sympathy to want of thought and imagination, and appealed for that courtesy and consideration which was eagerly and habitually shown by all classes of the community in their behaviour towards the blind.

THE PETER BENT BRIGHAM HOSPITAL.

HOSPITAL reports are seldom written in so interesting a way as is that of the institution where Professors H. A. Christian and Harvey Cushing are respectively the physician and the surgeon-in-chief.[1] Though the phenomenal activity is shown by statistics and long lists of publications issuing from members of the staff and residents there, the reports of the heads of departments breathe a spirit of humanity, combined with suggestions as to future lines of research, which are rendered specially attractive by the absence of formality in the presentation. An example of activity in a special clinic is the attendance in Dr. W. P. Murphy's clinic for anaemia of 388 patients in the year under review; of the cases of Addisonian anaemia followed up two only relapsed, one from financial inability to obtain liver extract and the other from an inadequate dosage. In Dr. Reginald Fitz's diabetic clinic the effect of liver treatment for long periods of time has been very encouraging, in some cases keeping the urine free from sugar and maintaining the blood sugar at a normal level when previously large quantities of insulin had been necessary. Further, the cause of the arterial disease so constantly present in elderly diabetics is under investigation, and it has been shown that angina pectoris and coronary thrombosis are not uncommon complications of diabetes. Professor Harvey Cushing gives a list of seventy-eight publications from his department, and raises some questions of special interest, the first being that of the qualifications of future leaders in surgery. Shortly before his death Dr. R. M. Pearce of the Rockefeller Foundation asked the surgeon-in-chief of the Peter Bent Brigham Hospital if he would care to give a list of the probable leaders in ten to fifteen years' time, since such a collection in the various branches of medicine would indicate the value or weakness of the present system and be a guide to those who were influencing tendencies at the present time. In reply, Professor Cushing declined to prophesy the leaders in the next generation of surgery and neurology, though he said he could easily name five surgeons and as many neurologists who might be expected to fill the part as future leaders; any of them, however, might be stricken down by some stroke of ill-luck, or make a fatal *faux pas*, and Lord Haldane's dictum was cited as to the haphazard way by which people arrive at eminence and leadership. In conclusion, Professor Cushing quotes his own reply to the frequent questions asked by students whether or not it was worth while to be both a house-physician and a house-surgeon: The answer runs as follows: "If you are going to be a surgeon, it doesn't much matter, for you will have to treat every surgical patient medically as you go along; but if you are going to be a physician, by all means take a surgical house officership first, for you will not only learn what the surgeon can and cannot do, but you will acquire sufficient confidence and judgement to spare yourself from holding a surgical consultation whenever one of your patients gets a belly ache."

[1] Peter Bent Brigham Hospital, Boston. Sixteenth Annual Report, for the year 1929. 1930, pp. 247.

TRAINING IN MEDICAL RADIOLOGY.

A SPECIAL feature of the Second International Congress of Radiology in Stockholm two years ago was a meeting held to discuss teaching and training in medical radiology. Twenty-three papers on this subject were submitted from as many countries, and these have now been brought together, with interpolated comments, into one volume.[1] Most of the papers are printed in German, the rest in English or French. Dr. Stanley Melville is responsible for the British section, and his communication deals largely with the teaching for the diplomas in medical electricity and radiology granted by the Universities of Cambridge, Liverpool, and Edinburgh. A point of interest which emerges from these papers is that whilst Great Britain at the time of the congress had no chair of radiology, the United States had twenty-five full professors and nineteen associate or assistant professors, and every other country represented had its professor of this subject. On the other hand, Britain gives three university diplomas, and is apparently the only country to do this. Since the Stockholm congress the University of London has established a chair of radiology, and has appointed Professor Woodburn Morison the first professor. There is a good deal of very useful information to be found in many of these papers on the organization of tuition in radiology.

A NEW ANTHRAX PRECAUTIONARY CARD.

ANTHRAX, although so well known by name and by inquest reports on its victims, is a rare disease. Since statutory notification became obligatory in 1895 only once (in 1916) has the number of cases of industrial anthrax exceeded a hundred in the year. Hence its characteristic appearance in the cutaneous form, developing about the third day into a central black eschar with a surrounding irregular ring of vesicles, is liable to be neglected by the workman and be wrongly diagnosed by the medical practitioner, unless the latter's attention is arrested by the fact that his patient's occupation is that of dock labourer, wool-sorter, or tanner. With internal anthrax, the only symptom of which usually resembles a prostrating influenza, the chances are that a diagnosis is only made by bacteriological examination after death. Unfortunate happenings of this kind

[1] *Teaching and Training in Medical Radiology. Acta Radiologica*, Supplementum iv. Stockholm 2: Editorial Secretary of the *Acta Radiologica*. 1930. (Swedish crowns 20; for orders through booksellers, Swedish crowns 30.)

have led the Factory Department of the Home Office to adopt the novel and salutary plan of issuing a card[1] with two coloured illustrations showing the appearance of the so-called malignant pustules on the first or second day, and on the third or fourth day. This the workman can carry about with him, and he is enjoined, if he gets a pimple, to take the card and "show it to the doctor." As in other bacillary infections, serum treatment, combined with physiological rest of the part affected, which is now commonly practised instead of excision, is the more successful the earlier treatment is commenced. The best known of these serums are Sclavo's, Evans Sons Lescher and Webb's, and Mulford's. The illustrations on the precautionary card have a historical interest, as the originals were painted some thirty years ago, at the request of the Factory Department, under the immediate supervision of Dr. John Henry Bell of Bradford, who, in 1879, was the first to prove the identity of anthrax in animals with the so-called "wool-sorters' disease."

JOINT TUBERCULOSIS COUNCIL.

AT a meeting of the Joint Tuberculosis Council, held on October 18th, an announcement was made concerning the transatlantic tour undertaken this summer by fifty-one tuberculosis representatives, and financed by the Sun Life Assurance Company of Canada. In order to make the tour more useful to participants and non-participants, it had been decided to allot to various members a special section of the subject for them to observe, reflect upon, and write up on their return, so that when an institution was visited everyone's attention was alert and each visitor full of questions about his particular branch. The subjects chosen and to whom they were allotted are as follows: Dr. L. T. S. Burrell, lipiodol and oleothorax; Drs. Dickinson and Clarke, methods of diagnosis; Dr. F. H. Coutts, central tuberculosis administration; Drs. Peter Edwards and Goodwin, surgical treatment of pulmonary tuberculosis; Dr. Fowler, drug treatment of tuberculosis; Dr. Fletcher, methods of recording tuberculosis; Dr. G. T. Hebert, pleural effusion; Drs. Jessel and D. A. Powell, local tuberculosis administration, including dispensaries; Drs. Johnstone, McDougall, and Stott, after-care work; Drs. Traill and Lloyd, chest radiography; Dr. Martin, the treatment of non-pulmonary tuberculosis; Dr. Pugh, the construction of hospitals and sanatoriums; Dr. G. P. Price, the treatment of tuberculous pensioners; Drs. Rennie and Thompson, tuberculosis from the public health viewpoint; Dr. Stobie, tuberculin and allied therapy; Dr. Tattersall, preventorium work; Drs. Trayer and Mayberry, advanced tuberculosis; Dr. James Watt, sanatorium administration; Dr. Wilson, bacteriology; Dr. Wingfield, classification; Dr. T. R. Elliott, methods of dealing with tuberculous pregnant women; Dr. Dingley, training of nurses in tuberculosis work; Dr. Allison, collection of diet, temperature, and other charts; Dr. Blackmore, collection of photos; Dr. Heffernan, silicosis; Drs. Wood and Holmes, light treatment; Dr. Vallow, milk supply; Dr. Trimble, haematology; and Dr. Sutherland, statistics.

FAMILY COUNCIL LAW.

THE Eugenics Society has issued a survey[2] of certain measures of protection and control provided by different European countries for those classes of persons who, while neither insane nor feeble-minded, suffer from some degree of mental instability which renders them incapable of enjoying the full freedom of ordinary social life. In France, for example, the ancient family council system, consisting of six members of the patient's nearest relatives, is firmly established. The internment of an irresponsible person does not depend on medical certificates, but on the decision of the family council presided over by the judicial authority. The strict rules of the Code Civil and the existence of a public prosecutor in each district of France appear to make procedure smooth and effective. The "semi-interdicted," like the irrational spendthrift, may be controlled by the "conseil judiciaire," whose duties are described in detail. Germany considers the State as the prime guardian whenever a guardian is necessary, although family councils may be convened for special reasons. The functions of the Court of Wards and the working of the juvenile office are carefully stated. In the Netherlands the family council, as understood in France and elsewhere, does not exist. A system of guardianship, or curatela, supervises borderline cases, being very precise in its attitude to the spendthrift. In Italy the family council exists as a permanent domestic board, and its deliberated opinion is required for interdiction. The causes of its assembly, its composition, and its duties are fully described, along with the procedure of interdiction. Another form of guardianship—"inhabilitation"—is applied to the deaf and dumb, the congenitally blind, and where the unsoundness of mind is insufficient to justify interdiction. Scandinavia, here represented by Sweden, deals with its affairs by Ministries of State working through the district social and medical boards, assisted by councils of experts. The Temperance Board gives much attention to dipsomaniacs; and the marriage code forbids the union of the mentally unfit. The chapter on Scotland takes note of the Scottish practice of voluntary admission to mental hospitals, and the use of observation wards by several of the largest parish councils. The survey concludes with an exposition of the Lunacy Laws of England, a retrospect, and an analysis of the present situation with its difficulties and proposed changes.

MENTAL TREATMENT ACT: APPROVAL OF MEDICAL PRACTITIONERS.

MEDICAL practitioners who desire to be approved by the Board of Control for the purpose of making recommendations in respect of voluntary patients under 16 years of age—Section 1 (3) of the Mental Treatment Act—and temporary patients—Section 5 (3)—can obtain the necessary form of application by writing to "The Board of Control, Caxton House West, Tothill Street, London, S.W.," and marking the envelope "M.T.D." in the top left-hand corner. As the Act comes into operation on January 1st next, intending applicants should write for this form immediately. The Board cannot entertain applications for approval from medical practitioners of less than five years' standing on the *Medical Register*.

THE next session of the General Medical Council will commence at 2 p.m. on Tuesday, November 25th, when the President, Sir Donald MacAlister, Bt., will take the chair and give an address. The Council will continue to sit from day to day until the termination of its business.

THE Mitchell Lecture before the Royal College of Physicians of London will be delivered at the College, Pall Mall East, S.W., by Dr. L. S. T. Burrell, on Thursday, November 13th, at 5 p.m.; the subject is "Indications for treatment in pulmonary tuberculosis."

THE annual dinner of the Society of Medical Officers of Health will be held at the Piccadilly Hotel, London, W., on Thursday next, November 13th, at 7.30 p.m. Reception at 7.10 p.m. The Minister of Health has promised to attend, and the occasion will be in the nature of a domestic celebration of distinctions recently conferred on members of the society. The guests of honour will be Sir Eustace Hill, Dr. W. G. Willoughby, President-Elect of the British Medical Association, and Mr. G. S. Elliston, *M.C.*, M.A., on his retirement from the post of executive secretary of the society. Owing to absence abroad, Sir Andrew Balfour is unable to attend.

[1] Home Office: Form 1893. H.M. Stationery Office. Price 2d. net, or 3s. net for 25.

[2] *Family Council Law in Europe.* Issued by the Eugenics Society, 20, Grosvenor Gardens, S.W.1. 3s. 6d.

THE STATE OF THE PUBLIC HEALTH.

SIR GEORGE NEWMAN'S REPORT FOR 1929.

[FIRST NOTICE.]

THE annual report of the Chief Medical Officer of the Ministry of Health[1] is always a vital document, but this year three of its twelve sections are of special importance in view of public agitation about one matter, some ill-informed criticism of another, and changes in public administration affecting the third. The sections are those which deal respectively with maternal mortality and morbidity, the insurance medical service, and the administrative effects of the Local Government Act. We propose in this first notice to deal with these three sections, leaving the other and more statistical parts of the report to a later occasion.

MATERNAL MORTALITY.

During 1929 there were 643,673 births registered in England and Wales. The number of deaths classified as due to pregnancy and child-bearing was 2,787, and in addition there were 960 deaths of women not so classified, but returned as associated therewith. The total puerperal mortality (4.33 per thousand births registered) was only slightly below the figure for 1928 (4.42), which was the highest recorded since the classification came into use in 1911. The death rate from puerperal sepsis alone, apart from other puerperal causes, was 1.80, the highest recorded, except in 1920, when it was 1.81. "It is disappointing," says Sir George Newman, "to be unable to report any definite tendency towards reduction, especially as all investigation indicates that these figures might and should be substantially reduced."

An analysis of the figures in relation to locality shows that the northern districts of England have the highest maternal mortality rate. In London the rate is lower than in any other part of the country, a favourable position due in part to the number of maternity hospitals and medical and midwifery schools, but also in part to the smaller proportion of abnormal confinements. Rickets is less familiar in London than in districts of Lancashire and Yorkshire, and therefore there is less risk of pelvic deformity leading to difficult labour; also possibly some forms of toxaemia, causing eclampsia and haemorrhage, are more prevalent in northern industrial districts. The Midlands and South have almost invariably a lower maternal mortality than the North, though a Midland county, Huntingdonshire, has the highest maternal mortality in England, and Radnorshire the same unfortunate pre-eminence in Wales. Puerperal sepsis, as the report points out, is a disease of urban rather than rural life, but the other causes of maternal deaths, such as difficult labour, eclampsia, and haemorrhage, are such as call for prompt and skilled medical aid, which is more readily available in the large towns.

In writing of the interim report by the Departmental Committee on Maternal Mortality and Morbidity, Sir George Newman, who was its chairman, points out that in only 5 per cent. of the deaths investigated by the committee was there an absence of reasonable facilities for effective medical care, but in 43 per cent. there was an absence of ante-natal care, or errors of judgement by doctor or midwife, or negligence of the patient. "There is, and can be, no allocation of blame or culpability, for all the circumstances and conditions are not known, but there is the clearest possible indication of the exact direction and focus of the necessary remedies. . . . They imply amendment in the medical care of the individual mother." Three practical considerations emerge from the report of that committee and of the other departmental committee, on the training and employment of midwives. "First, there is an absolute need for effective ante-natal supervision of every case of pregnancy; secondly, there is a relative need for improved obstetric practice—on the part of doctors and midwives—ante-natal, at childbirth, and post-natal; and lastly, there is a relative need for the fuller completion of local organization to provide, and make available, all the necessary facilities for an effective service." Ante-natal clinics are increasing, but as to maternity institutions, although the number is considerably in excess of what it was ten years ago, the bed accommodation is still insufficient to provide for all the women who may desire to be confined in the hospital, partly because there is an increasing demand for the treatment of obstetric complications which were formerly neglected or treated at home, as well as for the treatment of intercurrent diseases associated with pregnancy.

Contraception and the Position of Municipal Clinics.

In view of the fact that some local authorities are now being urged by the advocates of contraception to provide facilities for its practice, four pages of the report are devoted to a very clear official statement of the position. It is pointed out that this claim is preferred at a time of falling birth rate, and when the provision for maternity and the treatment of conditions incidental thereto is receiving more skilled attention than formerly, alike in institutions under local authorities, in private medical practice, and in voluntary hospitals. "Birth control" is not a novel idea; it is only the means which have changed. Certain disadvantages attaching to an indiscriminate advocacy of artificial contraception are set down, as, for example, that organized public instruction on the subject is liable to become propagandist and pseudo-authoritative in presentation and impression, leading to a commercial exploitation of the means; that the effects of artificial contraception may be not only local and physical, but general, organic, and psychological; that the means may be deleterious in their effects, and (apart from sterilization) uncertain in action; and that such methods cannot be a substitute for social amelioration, self-control, or decent conditions of life. Organized instruction in contraceptive methods would be foreign to the purpose of a maternity and child welfare centre established by a local authority for expectant and nursing mothers. It is also considered doubtful whether there is at present a sufficient degree of unanimity in the medical profession or in public opinion as to contraceptive methods to justify a local authority supporting out of the rates a centre for systematic instruction. The Ministry's attitude is that the use of maternity and child welfare centres, including ante-natal clinics, for such a purpose would damage their proper work. In particular cases in which there are medical grounds for giving individual advice on contraceptive methods to married women in attendance at the centres, it might be given, but such advice should be limited to cases where further pregnancy would be detrimental to health, and should be offered at a separate session and under conditions such as would not disturb the normal and primary work of the centre.

THE EFFICIENCY OF THE INSURANCE MEDICAL SERVICE.

The section on the insurance medical service begins with an assertion of the preventive value of the work of the general practitioner. It is pointed out that the general practitioner, skilled in diagnosis, who detects tuberculosis in the early stage and shows the patient how to avoid becoming a source of danger to others, has made an effective contribution to the prevention as well as the cure of disease. The same applies to detection of any infectious condition in the early stage, also to ante-natal care, and to much else in general practice. "The insurance medical service, in active operation every day for some 140,000 patients, has therefore, as I view it, an extremely important place among the agencies which are working for the prevention of disease."

The number of insurance practitioners in England and Wales in 1929 was 15,573, and the average number of insured persons on a practitioner's list was 932. It is estimated that 44 per cent. of the men and 33 per cent. of the women on the *Medical Register* in this country are engaged in insurance practice. Sir George Newman answers his own question as to how the efficiency of the

[1] *On the State of the Public Health.* Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1929. London: H.M. Stationery Office. 3s. 6d. net.

service is maintained by saying that, first of all, reliance is placed on the natural tendency of the doctor to do his best for his patient. "As a rule patients are considerate of their doctors and do not make unnecessary demands upon them. As a rule doctors do their best for their patients. There are, of course, exceptions to both rules, but, as I see the position, they are few and far between." Other safeguards are free choice of doctor and the right to lodge complaints with insurance committees. In 1929 there were 174 complaints against practitioners investigated by medical service subcommittees, and in thirty cases the Minister decided that remuneration should be withheld from the practitioner. Remuneration was also withheld from five practitioners for failure to keep proper medical records, and from eight for failure to furnish information required by the regional medical officer. Two formal representations were made by insurance committees that the continuance of a practitioner on the medical list would be prejudicial to the service, and in one of these cases the Minister removed the name. Sir George Newman recapitulates the procedure with regard to the checking of excessive prescribing. Under this heading, in 1929, the number of practitioners interviewed by the regional medical officers was 1,369. In 147 cases a warning letter was sent to the practitioner by the Minister, and thirty cases were referred for investigation by panel committees, in twenty-eight of which it was found by the committee or on appeal by the referees that unnecessary cost had been incurred.

Increased Sickness Claims.

The question of increased sickness claims and the controversy with regard to medical certification is again the subject of extended reference. There was a further increase in the number of such claims in 1929. Following on the report by the Government actuary on the examination of the sickness and disablement experience of a group of approved societies,[1] two special investigations have been made—the first, a scrutiny of the results of reference of insured persons by approved societies to the regional medical staff, and the second (the results of which are not yet available) an investigation of the actual condition of a representative sample of insured persons who were in receipt of sickness or disablement benefit on a given day. The first investigation involved a scrutiny of papers relating to 81,375 persons, being one-sixth of the total number referred during the year. In regard to each person it was ascertained what was the cause of incapacity as certified by the doctor, the duration of the incapacity at the time of reference, and whether, following the reference, the patient was deemed to be capable of work. The causes of illness set out on the medical certificate were grouped in four categories, and the patients were classified as to sex, and, in the case of married women, as to age and marital condition. It was found that the proportion of persons who on reference ceased to draw benefit was highest among the married women of 45 and under, single women coming the next highest, and both of these were much higher than the men or the married women of 46 and over. The large proportion of persons who ceased to draw benefit when referred after a relatively short period of incapacity (the cause being set out as catarrh, chill, cold, influenza, neuralgia, and so forth) was also noteworthy. It is admitted—a very important point which seems to need all the emphasis that can be given to it—that in many of these cases, if the patient had not been referred, a final certificate would have been issued on the first occasion on which the doctor saw the patient after the date when the reference was, as it happened, actually made. But it is added that when full allowance has been made for this probability, it is difficult to resist the conclusion that in many of these cases a final certificate ought to have been issued at an earlier date. The societies may be compelled, for the protection of their funds, to refer cases of this type to the regional medical staff at a much earlier stage of illness than has hitherto been the practice of most societies. Whatever new facts may be brought to light, it is held that there is room for further effort directed to the reduction of the number of unjustified claims for benefit.

[1] *Supplement*, May 10th, p. 213.

Administration of the Local Government Act.

Sir George Newman treats at length of the unification of health services under the Local Government Act, 1929. He points out that whilst the new Act calls for the active co-operation of the whole medical profession, and both enlarges and makes more serviceable the clinical applications of the science and art of medicine in many and varied directions, it entails in still higher degree an improvement in the medical and administrative work of the medical officers in the public service. The transfer of institutions to local authorities with ampler resources than the boards of guardians should imply a great improvement in the treatment of both acute and chronic sick. The traditions of British medicine as exemplified in the voluntary hospitals and in the best type of medical practice must become increasingly the routine practice in all these institutions.

With regard to the position and duties of medical officers of health, he thinks that their attention will be absorbed for a considerable time to come in the utilization and development of the transferred functions and institutions. Two fundamental objectives to be borne in mind are that the interest of the patient and the community must be paramount, and that the administrative end must be the unification of all the public medical services of the area. The medical officer of health and his medical staff must be the normal, responsible, and primary advisers of the authority, and they should be so qualified and experienced, and in such close touch with the medical practitioners of the area, as to ensure that their advice is safe, sound, and competent. He mentions, among other matters, the appointment of local medical practitioners for outdoor or institutional service as one of the issues on which the medical officer of health should take such counsel as will better qualify him to offer timely and competent advice to his authority.

After some further discussion of the effects of the Act, Sir George Newman reiterates the four principal medical points upon which the Act lays emphasis: the transference to 140 larger health authorities of functions hitherto belonging to 650 boards of guardians; the enlargement of the community of interest in State medicine; the change from an annual grant in aid to a "block" grant for health services; and, finally, the new standard of achievement which the Act sets up.

(*To be continued.*)

Ireland.

Public Health Reform in the Irish Free State.

The Irish Free State comprises four county boroughs and twenty-seven administrative county areas with sixty-six urban districts. At the passing of the Local Government Act of 1925, with the exception of Dublin County Borough, there was no whole-time medical officer of health in the Irish Free State; to-day, fifteen whole-time county medical officers have been appointed, besides assistant officers in various counties. Some aspects of this rapid progress in public health organization are described by Dr. E. F. Stephenson in a paper recently published in the *Journal of State Medicine* (vol. xxxviii, No. 10).

Central and Local Authorities.

The Department of Local Government and Public Health, Dublin—to which Dr. Stephenson is chief medical adviser—was established in 1924 by the Ministers and Secretaries Act, and co-ordinates all the essential health services in the State, preventive and curative. It includes, as an integral part of its administration, the medical inspection and treatment of school children, which is carried out through county boards of health and borough councils—an arrangement that has facilitated the initiation and development of county health schemes. Other circumstances that have simplified the consolidation of the medical services in a single department have been the exclusion, in 1911, of medical benefit under national health insurance and the abolition of insurance committees in 1929.

An effect of the Act of 1925 was to constitute county councils sanitary authorities for the entire rural area of each county. As such, their powers and duties are exercised through boards of health, consisting of ten members elected by proportionate representation. In addition to matters relating to public health, these county boards are charged with the administration of the Medical Charities and other Poor Law Acts—except in Dublin, Cork, and Waterford. A board of health is empowered to appoint committees, such as public health, hospital and dispensary, and homes and homes assistance committees. This machinery is stated to promote efficiency and dispatch in the execution of business, while maintaining co-ordination between the services of preventive medicine, treatment, and relief as constituted in the central authority. Local health committees are also appointed at seaside resorts, small towns, and villages to deal with questions of domestic interest.

County Health Schemes.

In describing the inauguration of county health schemes—which was assisted by the co-operation of the Rockefeller Foundation—Dr. Stephenson remarks that it is impossible to devise a rigid scheme that can be applied to all parts of the State; each county presents health problems peculiar to itself. Thus, in the reorganization of rural health administration, tuberculosis demanded early attention in the counties of Cork, Wicklow, Meath, and Roscommon, where comprehensive schemes under the Tuberculosis Prevention (Ireland) Act were not already in force. Diphtheria immunization campaigns had to be started in Louth (Dundalk) and in certain endemic areas in Cork, where the supervision of meat supplies was also a prominent question. The eradication of typhus fever in Mayo, of enteric fever in Kerry and Galway, and of trachoma on the western seaboard are still outstanding problems. Practical demonstrations on the production of clean milk are contemplated in the principal milk-producing counties, such as Limerick and South Tipperary. Progress, therefore, must depend to a large extent on local conditions—for example, the character and distribution of the population, existing services and institutions, the financial resources available, and the ambition of the local authority. It was early perceived that an enlightened public opinion was essential before advance could be made in public health reform, and much of the success that has now been attained is attributed to preliminary educational propaganda through the press and by direct communications to local authorities dealing with the administrative, epidemiological, and economic problems involved. Statutory sanction was obtained by the Local Authorities (Officers and Employees) Act in 1926 for the appointment of county medical officers of health by selection boards set up by central authorities. This Act, which applies to all professional appointments, has apparently established a virtual State medical service in which local authorities have surrendered their previous patronage. Since the appointment of county medical officers of health, with supervisory powers over all sanitary officers, the responsibilities of district medical officers have been considerably curtailed. Their present duties include the notification of infectious diseases, the reporting of nuisances, etc., and they are employed, as dispensary medical officers, in the domiciliary treatment of tuberculous patients residing in remote places. Tuberculosis officers as such are no longer appointed. Experience has shown that in county areas outside the large centres of population ante-natal supervision and infant and child welfare can generally be carried out most effectively through the part-time service of nurses employed by district nursing associations. These nurses, who are supplied and inspected by the Queen's Institute of District Nursing, act as health visitors and as tuberculosis nurses in their respective districts, and attend to follow-up work in connexion with the school medical service. Excellent work in the prevention of sickness among school children is reported to have been done in Kildare, Louth, Offaly, and Cork, and schemes for a school medical service are coming into operation in other counties where medical officers of health have been appointed. Notable expansion has also taken place in the health services of county boroughs. In Dublin a whole-time medical officer has been appointed in charge of the maternity and child welfare arrangements, and closer co-operation has been instituted with the maternity hospitals of the city, while in the county borough of Cork one part-time official has been replaced by a medical superintendent officer of health, an assistant, and a school medical officer with appropriate staffs.

Food Supplies.

Continuity in supervision of food supplies has also been established. By arrangement with the Department of Agriculture veterinary surgeons employed by sanitary authorities to supervise meat and milk supplies also discharge duties under the Diseases of Animals Act and the Bovine Tuberculosis Order over the same area. Arrangements have also been made that veterinary examiners under the Agricultural Produce (Fresh Meat) Act should be officers of the local authority, thus ensuring the soundness of the meat supplies for home consumption as well as for export.

Montgomery Lecture in Ophthalmology.

The Montgomery Lecture in Ophthalmology was delivered recently in the Medical School, Trinity College, Dublin, by Dr. Francis S. Lavery, who selected for his subject the distribution and control of trachoma in the Irish Free State. He stated that reliable statistics of the incidence of trachoma in Ireland had not yet been compiled, but that he had been engaged in this subject during the last twelve months. His investigations led him to conclude that trachoma was much more widely prevalent than was generally supposed. About a hundred new cases were treated annually in the Royal Victoria Eye and Ear Hospital, Dublin, but this was by no means an indication of the entire number of existing cases. His investigations among children in several institutions revealed that very many children were suffering from the disease. Those in charge of institutions often failed to recognize that there was anything wrong until almost irreparable damage to eyesight had been done. In one orphanage where he had found 23 per cent. of the children suffering from the disease, eleven fresh cases appeared during an investigation conducted eighteen months later. In urging the extension of school inspection and the establishment of special institutions for the segregation and treatment of children suffering from trachoma, he referred to the good work that was being done in the institutions at Swanley, Kent, and expressed the hope that similar institutions on a smaller scale would soon be established in the Free State.

Scotland.

Scientific Committee for Medical Investigation.

A SCIENTIFIC advisory committee on medical administration and investigation has been appointed by the Secretary of State for Scotland, with the following reference: "To assist the Department of Health for Scotland in applying the results of scientific research to the details of public health administration and in promoting such medical investigations as come within the sphere of the Department or of the local authorities in Scotland." The members of the committee are as follows:

Alex. Bowman, D.Sc., F.R.S.E., Scientific Superintendent, Marine Laboratory of the Fishery Board for Scotland.

Carl Hamilton Browning, M.D., F.R.S., Professor of Bacteriology, Glasgow University.

E. P. Cathcart, C.B.E., M.D., F.R.S., Professor of Physiology, Glasgow University.

F. A. E. Crew, M.D., D.Sc., Professor of Animal Genetics, Edinburgh University, and Director of Animal Breeding Research Department.

Sir Walter M. Fletcher, K.B.E., M.D., F.R.S., Secretary to the Medical Research Council.

Sir Robert Greig, M.Sc., F.R.S.E., Secretary, Department of Agriculture for Scotland.

John Jeffrey, C.B., Secretary, Department of Health for Scotland.

J. Parlane Kinloch, M.D., Chief Medical Officer, Department of Health for Scotland.

A. S. M. Macgregor, M.D., Medical Officer of Health, Glasgow.
T. J. Mackie, M.D., Professor of Bacteriology, Edinburgh University.
J. J. R. Macleod, D.Sc., M.B., Professor of Physiology, Aberdeen University.
Robert Muir, M.D., F.R.S., Professor of Pathology, Glasgow University.
J. B. Orr, D.S.O., M.D., Director of the Rowett Institute for Research in Animal Nutrition, Aberdeen.
W. J. Tulloch, M.D., Professor of Bacteriology, St. Andrews University.

Dr. Parlane Kinloch is chairman, and Mr. George Wallace of the Department of Health for Scotland is secretary of the committee. The appointment of the committee follows on the conference of research organizations which was held in Edinburgh in November of last year, and at which Mr. Johnston, M.P., Under-Secretary of State, presided. A more intensive use of Scottish research material and the correlation of work in the biological sciences, having a bearing on medical as well as on agricultural, fishery, or other fields, were urged at the conference. It was also urged at the conference that a scientific advisory committee would secure for community health purposes the application of the most recent results of medical research. It will be noted that the personnel of the committee includes representatives of several branches of biological work.

Reopening of Bridge of Allan Spa.

The spa buildings at Bridge of Allan were formally reopened by Sir Humphry Rolleston on October 30th. The mineral waters of this resort have been known for upwards of 150 years, and in the middle of the last century the town received annually more than 30,000 visitors. Gradually, however, the popularity of the spa began to decline, no doubt on account of the fact that the equipment of the wells house was not kept up to date; but a determined effort has now been made to restore its former reputation. The town council acquired the property a few years ago, and investigations were made to ascertain whether the waters still retained their properties. Among those consulted were Dr. Judd Lewis, chairman of the Standard Measurements Committee of the International Society of Medical Hydrology, and Dr. R. Fortescue Fox, chairman of the council of that society. The results of analysis were so satisfactory that a scheme for renovation and modernizing was entered upon six months ago. The new spa comprises a pump room for the sale of mineral water, a sun lounge fitted with "vita" glass, bathrooms for hydrotherapy, and a department for electrotherapy and inhalation. The town council has arranged with the Allan Water and Spa Hotel, whose property adjoins the wells, to administer the establishment. Bridge of Allan is situated about thirty miles to the north of Glasgow on one of the spurs of the Ochil Hills. Sheltered from north and east winds it has a southerly aspect, and is easy of access from all parts of Scotland. The journey by road or rail from Edinburgh, Glasgow, and Perth takes little more than an hour.

Sir Humphry Rolleston's Address.

The opening ceremony was performed in the sun lounge, and the large company was presided over by Provost Dunbar. Sir Humphry Rolleston, in the course of his address, said there was no doubt whatever that spa treatment did good, but exactly how this was brought about invited considerable discussion. Obviously many factors might play a part; some of these were shared by all health resorts, whether or not they possessed any special waters, and whether or not they made full use of such advantages. Thus a division of health resorts might be made into (1) those benefiting their visitors in a general manner on account of change of climate and atmospheric conditions, winds, pure air, sunshine; and (2) spas exerting a specific influence in virtue of the internal and external effects of waters containing active principles, such as certain salts. Factors common to all health resorts included change of scene and all that this meant in mental rest and freedom from routine and worry; a new physical as well as mental atmosphere, bracing, dry, or soothing, instead of the reverse; life in the open in place of an office or study. There was much to be learned about the way in which mere change of environment did good or harm, quite apart from the healthy life and wholesome diet that should form part of a holiday. The factors peculiar to individual spas were numerous and diverse, some being obvious at the first glance. The chemical composition of the water and its temperature must, of course, be taken seriously into consideration. The influence of iodine in water in preventing goitre was now well known, but much remained to be learned about the effect of minute quantities of constituents such as arsenic, copper, magnesium, strontium, and barium in spa waters, especially when they were in organic combination. Bridge of Allan had great natural advantages; its protected position resembled that of Cheltenham in the West of England and Montpellier in the South of France, and therefore its season extended from January 1st to December 31st. The town council was to be congratulated on acquiring the wells with a view to restoring Bridge of Allan to its high position among the spas of Scotland. An important factor in the permanent success of a spa was knowledge, kept up to date by watchful investigation, not only of the health-promoting characters of the place and its waters, and of the methods of putting them to the best use, but also of the diseases which could with advantage be treated there. Further—and this was a difficult problem, perhaps yet to be fully solved—how to recognize the constitutional peculiarities which determined whether or not a patient was likely to benefit from residence in the place, and what kind of treatment was suitable to each visitor. These and other questions must be entrusted to medical advisers, and on their decisions much must turn in establishing the reputation of a spa. Bridge of Allan had a triple qualification for assured success—its climate, scenery and associations, the exceptional composition of its water, and a fine up-to-date equipment.

Dr. Fortescue Fox said that he had been interested for many years in the waters of Bridge of Allan and in the possibilities of the place as a health resort. He did not know any spa which had been more thoroughly reported upon. A new classification of waters had just been adopted at the Lisbon meeting of the International Society of Hydrology. It was now proposed to group the waters of all countries on an organized method, and one of the examples set forth in a specimen register was the water of Bridge of Allan, described therein as a chloride and calcium water.

Changes in Scottish Public Health Administration.

Dr. A. S. M. Macgregor, medical officer of health for the city of Glasgow, delivered an address in Glasgow, on October 28th, dealing with the effects on public health administration of the Local Government Act, 1929. In the new health organization, he said, nothing dramatic or novel was involved; there had been a consolidation of the various authorities, and the health committee of the corporation, for example, now administered a comprehensive service, embracing, in addition to the special hospitals administered under the Poor Law, the mental hospitals and the medical inspection and treatment of school children. This implied that such medical functions would in future be dependent on and related to one another, and would advance in accordance with a concerted policy. The Act went further than this, however, and embraced the institutional treatment of all sick persons, whether they were under the Poor Law Acts or not. Thus a large question had been opened up, since the local authority was now empowered to take into consideration all the sick within its area. This meant that a careful examination must be made of the whole situation in association with the existing facilities provided by voluntary hospitals and other agencies. The position of the latter was fully safeguarded under the Act, but there would be improved accommodation and medical service. The Act involved a unified effort to place on a sound footing the medical services of the whole country, and it also made the preventive aspect the first consideration. The suppression of smaller local authorities would enable health problems to be surveyed and solved in a more efficient manner, especially those concerning hospital accommodation for special purposes, which could best be dealt with by regional co-operation.

Retirement of Edinburgh Medical Officer of Health.

Dr. William Robertson, who retired recently from the post of medical officer of health to the city of Edinburgh, was entertained at luncheon on October 30th by the Edinburgh Town Council, and was presented with a set of the *Encyclopaedia Britannica*. Lord Provost Whitson, in making the presentation, said that Dr. Robertson, after acting as medical officer of health for Perth and Auchterarder, went to Paisley in 1898 as whole-time medical officer, and thereafter held a similar post in the burgh of Leith for nineteen years. In 1920, after the amalgamation of Leith and Edinburgh, he became assistant medical officer of health under Dr. Maxwell Williamson, whom he succeeded in 1922. His tenure of office in Edinburgh had been most successful; in addition, he had found time to contribute to various journals over fifty articles dealing with hygiene, and had written a number of standard books on health subjects. His lectures on sanitary law in Edinburgh University had been noted for their breadth and clearness of vision. Having now come to the end of his official career with the corporation, the members wished him a long and happy life in his retirement. In returning thanks Dr. Robertson said that there were two types of medical officer—the academic official and the non-academic official; he considered that he belonged to the second category, for in his opinion it was necessary to get among the people if one wanted to have things done. He thought that no city in the United Kingdom had done more for public health propaganda than Edinburgh. What could be achieved by public health education was illustrated by the fact that in Edinburgh, with a population of 420,000, out of 24,000 gallons of milk sold daily, 16,000 gallons were of high grade quality, while in Glasgow, with its population of over 1,000,000, only 2,000 gallons of high grade milk were sold.

England and Wales.

King Edward's Hospital Fund for London.

THE financial and vital statistics contained in the annual statistical review of the London hospitals for 1929, which has just been published by the King Edward's Hospital Fund for London, indicate that, so far as London is concerned, the voluntary hospitals have never had a larger measure of public confidence since the first report was issued in 1903. At that date the figures related to 16 hospitals; the present report reviews the work of 138. The review opens with a table showing the extension of hospital work during the last five years. Since 1925 the bed complement has increased by 1,810, the average number of beds occupied by 1,550, while the number of new in-patients has increased by 38,000—10,900 in the course of the year. Although a decrease of 4,000 is recorded in the number of new out-patients, compared with the previous year, the number of out-patient attendances increased by 84,000. A reduction in the average period of residence has enabled a larger number of patients to take advantage of the services of the hospitals, which are no longer confined to the indigent sick. This remarkable expansion in volume of work has been accompanied by increasing financial support. Since 1925 the annual receipts from voluntary sources for all purposes, including receipts for building and endowment, have exceeded £2,000,000, while a record sum of £2,852,000 was received in 1929. The total income of all the hospitals dealt with in the review amounted to £3,600,000—an increase of £168,000 on the preceding year. In spite of an advance of £135,000 in the total expenditure, due to progress in various directions, including the addition of 380 new beds, the aggregate surplus of income over expenditure for the year was £50,000, compared with £17,000 in 1928. Income from legacies exceeded the figure of the previous year by £129,000. In the main divisions of ordinary income there was a decrease of £57,000 in donations, but an increase of £78,000 in receipts from patients, while the total ordinary income increased by £40,000. Details of income and expenditure are illustrated, as in the previous report, by coloured graphs and diagrams. The difficulties of the hospitals in recent years have not been caused by diminishing income but by increased expenditure, which in 1929 amounted to £3,550,000, compared with £3,415,000 in 1928. Of the increase of £516,000 since 1925, approximately £400,000 has been due to extended service, the remainder being accounted for by the increasing cost of hospital treatment. It should be noted, however, that these rising costs reflect the expense of additional benefits given by the hospitals to their patients as a result of advances in medical and surgical practice. A comparison between the increased expenditure and the increased volume of work shows that the expenditure for 1929 increased by 4 per cent. over the previous year, and by 17 per cent. over that in 1925; the beds occupied by 2.9 per cent. over the previous year and 13 per cent. over 1925; while out-patient attendances rose by 1 per cent. compared with 1928, and 15.5 per cent. compared with 1925. Notwithstanding the fact that a larger number of hospitals had deficits during the year, the aggregate amount of the deficits was smaller, and the total amount of surpluses larger, than in 1928. Copies of the statistical summary and review may be obtained from the offices of the Fund, 7, Walbrook, E.C.4, price 1s. each.

Tuberculosis in Lancashire.

The importance of having an efficient dispensary organization in a tuberculosis scheme is strongly emphasized by Dr. G. Lissant Cox, central tuberculosis officer for Lancashire, in his annual report for 1929. He points out that the objective of the dispensary work comprises early diagnosis and prevention, rather than cure, close co-operation with general practitioners and health officials being essential. A dispensary must be the centre of activity for a town or district in regard to measures for the prevention of the disease, the expert examination and diagnosis of cases, and the supervision and special treatment of all known tuberculous persons. For dispensary purposes the administrative county of Lancashire contains five large areas and two sub-areas. In each large area there is a chief dispensary co-ordinating the whole of the work, and branch dispensaries have been provided; there is also a pulmonary hospital containing about fifty beds for observation cases and the treatment of intermediate and advanced cases of pulmonary tuberculosis near the homes of the patients. The two sub-areas come under the control of the medical superintendents of the High Carley and Elswick Sanatoriums respectively. The report contains a small-scale map showing the arrangements of the dispensary areas in the county, and also a chart indicating the more important items for which the consultant tuberculosis officer of a dispensary area is responsible; the whole of the organization and work of one of these areas can thus be seen at a glance.

A considerable portion of this annual report is devoted to research work and new methods of treatment. The proportion of sanatorium beds for children in the administrative county is less than elsewhere, and the question naturally arose whether the fact that many children examined on suspicion of the disease, and rejected for treatment as being free from it, might result in early cases being overlooked, the beginnings of disease in later life being thus left to progress. A special investigation was therefore undertaken, and it was found that the rejection of 59 per cent. of the children up to the age of 15, who had been suspected of having tuberculosis, appeared to be fully justified. Of 1,084 young adults entered on the dispensary registers as new pulmonary cases, only 0.64 per cent. had been previously rejected in childhood by the tuberculosis officers. This very conservative diagnosis of pulmonary tuberculosis in children has resulted in the saving of public money, owing to the reduction in the number of sanatorium beds that it has entailed. In his previous report (for 1928) Dr. Lissant Cox dealt at length with the inquiry into the fate of young children in tuberculous households, and reference was made in the *Journal* of November 6th, 1929 (p. 927), to the low figure of subsequent infection which was thus obtained. It is now mentioned that confirmation of the Lancashire results has been subsequently reported in the case of Leeds, while

an inquiry undertaken by the research department of the Brompton Hospital led to the finding that the percentage death rate within the first five years of life for children living from birth in contact with a parent whose sputum was positive is 2.6 per cent.; the corresponding figure for Lancashire is 2.7 per cent. A study of the value of sanocrysin treatment has been continued, and Dr. Lissant Cox is inclined to advise serious consideration of its use for patients who do not respond to ordinary sanatorium treatment. Careful spacing of the intervals between the doses is necessary when reactions occur. He finds that the most obvious results are the effect on the sputum as regards the disappearance of bacilli, and the improvement in the lesions in the lungs made manifest by skiagrams taken before and after treatment. Another line of research which was followed was the value of irradiated milk in tuberculosis; the results of the trial, although limited to a few patients only, did not seem to justify the introduction of irradiated milk as a routine part of sanatorium treatment. Dr. Cox adds, however, that it is possible that a similar trial made on tuberculous patients living at home might have yielded different results, since many factors which obtain in the sanatorium regime are absent in home treatment, even when coupled with dispensary supervision. For example, heliotherapy was practised at the institution where this investigation was conducted, and it may be that an adequate amount of vitamin D was obtained in any case from that source.

Artificial pneumothorax treatment has been proceeding satisfactorily, and is now classed as a most valuable adjunct to sanatorium treatment. The special advantages thus gained were the more rapid disappearance of tubercle bacilli from the sputum, the relief of symptoms in certain cases of bronchiectasis, and the diagnosis of obscure chest conditions, especially new growths. Its employment is said to be indicated in 10 to 15 per cent. of admissions to a pulmonary hospital, and it was found to be especially useful in young adults, who frequently responded poorly to ordinary sanatorium treatment. Artificial light treatment at the dispensaries has continued to give satisfactory results, especially as regards patients suffering from tuberculosis of the skin, and tuberculous adenitis with abscess formation and skin involvement. The average cost of this treatment at twelve centres amounted to 4s. 6½d. per patient per week; very considerable reduction in expenditure was thus effected, since a large proportion of the patients would otherwise have required treatment in residential institutions. The cost of the tuberculosis scheme of the county council has amounted to a county rate of 1¾d. in the £, after making allowance for Government grants.

Rheumatism in Childhood.

A Chadwick public lecture on rheumatism in childhood was given by Dr. Gerald Slot on October 30th in the Great Hall of the British Medical Association, with Sir Thomas Barlow in the chair. Dr. Slot said that the London County Council had found it necessary to institute a special department to deal with this problem. In 1919 20 per cent. of the invalidity of school children in London was due to tuberculosis, and 14.5 per cent. to rheumatism; in 1926 it was 12 per cent. due to tuberculosis and 24 per cent. to rheumatism, and current figures showed lower tuberculosis figures and higher figures for rheumatism. At least 25 per cent. of the chronic invalidism in children was due to rheumatism and its terrible consequences—heart disease. Tonsillectomy was of no proved value as a remedy. Almost every case of recurrent rheumatic fever he saw had had tonsillectomy, and it was not agreed that there was a higher incidence of inflamed tonsils in rheumatic children. Some 15,000 cases of tonsils and adenoids were treated at L.C.C. clinics last year. Tonsils should not be removed merely because a child was rheumatic, if there were no other signs of throat trouble. Up to the present no specific treatment had been found, but there were indications that calcium therapy might prove of real value. The great step in prevention of rheumatism was the origination of rheumatism supervisory clinics, several of which had been established in London and the provinces. The clinic acted as a clearing-house, consultative centre, and centre for rheumatic research. Working in conjunction with these clinics were the physically defective schools which formed an important and necessary link in the treatment of rheumatic children. The problem of the after-care of these children was an urgent one; various methods existed by which they were taught trades suitable to their physical needs. The ultimate solution of the problem depended upon a realization of the severity of the disease and its crippling effects. Arrangements for adequate hospitalization and rest, suitable methods of education, proper work for the children on leaving school—all these were essential.

Correspondence.

ROYAL MEDICAL BENEVOLENT FUND:
A Christmas Appeal.

SIR,—Next month we shall be preparing to give, as is our usual custom, a Christmas Gift of 30s. to each of our annuitants and to some of the most necessitous of the grantees. These gifts are looked forward to by many. Some of the regular recipients are blind, others are deaf, and many of them are old and infirm; all are facing the hardships of poverty. Each year the number on our books increases, and we need no less a sum than £550 this year if no one is to be left out.

I appeal in plenty of time before Christmas, because we urgently need the money. Will any reader who has not yet contributed please make his first Christmas Gift to this cause and thereby help a fallen colleague, or his widow or orphan? If he cannot give a large donation, may I ask him not to disregard my appeal, but to send any sum, however small, to the Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.—I am, etc.,

London, W.1, Nov. 3rd. THOMAS BARLOW.

VACCINATION WITH B.C.G.

SIR,—In the *British Medical Journal* of October 25th an editorial article has been published on "Vaccination with B.C.G." which informs your readers inaccurately of the reports read on this subject at the International Conference at Oslo. Would you allow me to put things right, please?

The ten reports which have been presented to the above-mentioned conference have unanimously asserted the perfect harmlessness of B.C.G. The president of the German delegation, Professor Hamel, has declared that B.C.G. cannot be held responsible for the Lübeck disaster, which is due to a contamination at Lübeck of the B.C.G. strain, sent by the Pasteur Institute "in perfect condition, not virulent for guinea-pigs."

On the other hand, Professor Neufeld, director of the Robert Koch Institute, Berlin, has textually declared and published in the *Deutsche medizinische Wochenschrift* of September 19th, 1930:

"If it be true, that B.C.G. vaccination can be *but partially efficient*, we must not forget that it is impossible to inoculate more virulent bacilli in man, and that is why B.C.G., according to the actual state of our knowledge, represents the utmost chance of success in antituberculous vaccination. Calmette and Guérin have had the merit of putting such a vaccine at our disposal. It is our duty, in fighting this frightful disease, to use every process based on sufficient scientific research work. That is why I proposed that the authorities should introduce B.C.G. vaccination in Germany on a larger scale as a trial, especially in particularly exposed cases."

When writing of Petroff's R and S colonies, isolated from B.C.G., the author of the editorial article in the *British Medical Journal* ignores that Professor Neufeld stated, in his report at Oslo, that the Robert Koch Institute, having obtained R and S strains from Petroff, had established the presence of *virulent human bacilli in both R and S cultures*, and that consequently Petroff's experiments cannot be taken seriously, nor Watson's either. He added that in his opinion B.C.G. is manifestly innocuous, and that publications seeming to be in contradiction with this fact result from experimental errors. Finally, the writer of the article seems to mistrust living vaccines. But he forgets that they are the only ones that

immunize in a durable way, dead bacilli being only able to provoke ephemeral immunity. Nobody fears Jenner's cow-pox vaccine, or Pasteur's hydrophobia, anthrax, or rouget vaccines, and they are *living* vaccines.

Great Britain, Austria, and Portugal are the only European countries where as yet B.C.G. vaccination has not been experimentally tried. This is to be regretted, because evidence has been furnished at the Oslo conference that the *general mortality* is considerably lower in *vaccinated* than in *non-vaccinated* children—a striking proof of the innocuousness of B.C.G.—I am, etc.,

Institut Pasteur, Paris, Oct. 31st. Profr. A. CALMETTE.

INDICATIONS FOR PERFORMING WILDE'S INCISION.

SIR,—As no otologist, or other person interested in the aural complications of infectious diseases, has accepted Mr. Burt Hamilton's suggestion (October 11th, p. 619) that he or she should express an opinion on the value of Wilde's incision, may I now be allowed to reply to his letter?

First, let us drop the term "Wilde" and call it the "simple" incision; for Sir William told us to make it "at least an inch in length," and now we make it to fit the case, often a mere snick, not more than a quarter of that. Next, how does this small operation fit in with the advance of medicine? There are no more corners of the body for surgery to assail, and we know just how much can be cut out. We have now to learn how little we must do, and not how much we may do. We have to learn the conditions for which a minor operation is enough where now we do a major. The substitution of a simple incision for a mastoid operation in certain cases is an advance along these lines, and its possibilities must be closely scrutinized.

So now for Mr. Burt Hamilton. He states that "one operation is better than two." As a surgical principle there must be many exceptions to this. Other general principles come before it. For instance, that big things should not be done where small are enough. Even when the small thing has to be repeated it should still come first. Witness washing out the maxillary sinus some half-dozen times. And a simple incision for retro-auricular swelling is no bigger than that operation.

Take another general principle. That in acute illness one should deal with the acute trouble and leave the underlying disease for later. This is equivalent to saying that, under certain conditions, two operations are better than one. I wonder how many persons have lost their lives because the surgeon did a primary resection of the gut in a case of obstruction instead of merely relieving the latter. I have been so impressed with the value of this rule in the cases seen at the fever hospitals that I now apply it to those seen elsewhere. I incise the swelling and do the mastoid operation about a week later. I do this for the reason Mr. Burt Hamilton gives—that when an "incomplete operation is performed" you do not get so good a result. But it is the completeness of the bone work that matters. The incision is but the means of access to this. To operate across a mass of oedematous tissue, perhaps an inch in thickness, makes one much less certain of doing good work on the bone.

I am sorry Mr. Burt Hamilton thinks my two indications for doing the mastoid operation at once—namely, rigidity of the neck, and rigors—"do not materially alter the general proposition." I fear his dictum may prevent medical officers of fever hospitals from sending for otologists when they really are needed. I am sure that the main reason why the otologist has been so long in getting foothold in the fever hospital has been the sweeping nature of his statements. Medical officers in fever hospitals know that a simple incision does get a certain number of patients well. When they meet an otologist who will admit that they may know something about the diseases in which they specialize and who is willing to try this method they reciprocate, and are willing to let him do the mastoid operation later in those cases where the simple incision does not cure; they also help him to sort out those few cases in which the major operation must be done immediately. If an aural surgeon will not admit the value of a simple incision they will continue to do it without asking him; and if he adds that neck rigidity and rigors "do not materially alter the general proposition" they will continue to do it in these cases as well.

I have only replied to Mr. Burt Hamilton on matters of principle; in matters of detail we should probably come to a compromise, or even find ourselves in agreement after a half-hour's talk. I have re-read my article, and see no reason to alter my assertion that in all cases of infectious disease in which retro-auricular swelling arises it is best to make a simple incision. This is subject to the two exceptions quoted above, and to the fact that it is but rarely likely to be of value in the adult, as mentioned later in my paper. Even though it may be a "very sweeping statement" I believe it to be true. That it is a "very surprising statement" to one who has experience of ear disease in the infectious fevers is a matter of great interest to me. It is also a matter of gratification, for it shows that the service of the council to which I have the honour to belong is in advance of the times in this matter, and has something from which others may learn.—I am, etc.,

London, W.1, October 29th. T. B. LAYTON.

INVAGINATION OF DUODENAL ULCERS.

SIR,—I have recently begun to deal with one variety of duodenal ulcer by invagination, or by raising folds on each side and burying it. For the small ulcer, the first procedure is suitable, while for the larger kind, the latter method may be used. The more severe operation of gastro-enterostomy is eliminated altogether. The type of ulcer to which I refer is that which is non-obstructive, easily accessible, and situated on the anterior surface of the gut, at least half an inch from the pyloric ring; ulcers lying nearer the ring are, when buried, likely to involve or encroach upon the sphincter.

This method of treatment is much on a par with that of simple closure of the perforating type of ulcer. Very many of these cases are successfully dealt with year after year in surgical practice; in the great majority no further or later treatment is called for. My results, so far, have been particularly satisfactory, but the number of cases is small. Has any other surgeon adopted this method to any extent, and with what success?—I am, etc.,

Leigh, Lancs, Oct. 24th. DONALD MACLEOD, F.R.C.S.ED.

CONGENITAL RADIO-ULNAR SYNOSTOSIS.

SIR,—Mr. Bryan McFarland's letter in the *Journal* of October 18th (p. 664) recognizes only two types of synostosis of radio-ulnar joint; he states that he cannot find in the literature any reference to the "dislocated head" type mentioned and described in my article. I would like to refer Mr. McFarland to John Fraser's *Surgery of Childhood*, from which I quote the following: "The third type of synostosis is the 'dislocated head' type in which the head of the radius is well developed, but is displaced backwards or forwards." Also Abbott writes in *Surgical Diagnosis* (Graham): "In the latter type, the head of the radius is more or less normally developed, but is dislocated."

Mr. McFarland states also that pronation through 90 degrees "completely precludes the possibility of the existence of a radio-ulnar synostosis." In reply I again quote Fraser: "Flexion is normal, extension is limited, and pronation varies from 90 to 120 degrees"; and this also is in direct contrast with Mr. McFarland's statement that in radio-ulnar synostosis "flexion and extension are unimpaired."

Lastly, Mr. McFarland suggests that the first case which I described is one of congenital dislocation of the radius, and not a synostosis. In congenital dislocation only, supination is possible through an appreciable angle, whereas in the case described supination was not possible at all. Abbott, in *Surgical Diagnosis*, states. "It should be remembered that in a partial dislocation of the head of the radius, there is often fusion of the upper end of the radius and ulna."—I am, etc.,

Preston, Oct. 26th. DAVID J. DAVIES.

PYREXIA OF UNCERTAIN ORIGIN.

SIR,—Now that Dr. Crookshank (November 1st, p. 756) has entered the arena we may hope, under his guidance, to learn something from this discussion, and I would refer those interested to a more extensive presentation of his theme,[1] reproduced in his *Epidemiological Essays*.[2] His gibe against the systematists is a fair one, yet in the same paragraph he condones a systematist fallacy. Surely acetonuria, postulated by Dr. Chalmers (October 25th, p. 711) as the primary etiological factor in these epidemics, is merely a sequel to pyrexia commonly observed in children, and particularly in the "acidotic" type.

May those at present observing epidemics bear in mind Dr. Crookshank's words—let us hear more from them when the field work is done! In my series the posterior root ganglion was the common cerebro-spinal localization, and no case developed signs associating it at all closely with the Heine-Medin group. I am, however, ready to accept this association, for Schall's[3] cases presented many features in common with those now under discussion. Batten, in his Lumleian Lectures (1916), looks upon the inclusion of a neuritic type (VI) in the Heine-Medin group as not proven, but he writes: "The knowledge that a serous meningitis is present may not be of great value, but a serous meningitis of acute onset which rapidly clears up is strongly in favour of poliomyelitis."—I am, etc.,

Stratton-on-the-Fosse, Bath, Nov. 3rd. W. H. BRADLEY.

AVERTIN ANAESTHESIA.

SIR,—In his letter published on November 1st Dr. Parsons gives me convincing proof of the correctness of my deduction; his knowledge of avertin is second-hand, and he really does not understand the position. In the first place, no one who has any knowledge of anaesthesia would dream of using avertin "for routine work." In the second place, the manufacturers, when introducing avertin into this country, described it as a basal anaesthetic, and stressed the importance of not attempting to produce complete anaesthesia with it; its chief value, according to them, lay in its prevention of psychic shock. It also diminishes the amount of the general anaesthetic which may be given with it. To say, therefore, that "if avertin has to be given along with other anaesthetics the principal object of its use for routine work has disappeared," and that "if it has to be given in conjunction with another anaesthetic it ceases to be of primary importance" is to display a lack of knowledge of the subject which is startling. The statement about sodium amytal carries no weight, as I see that Dr. Parsons himself is reported in the *Lancet* (September 27th, p. 694) to have said during a discussion on this drug at Winnipeg that the dosage appeared unsatisfactory.—I am, etc.,

London, N.W.1, Nov. 1st. FRANCIS E. SHIPWAY.

TUBERCULOSIS OF THE TONGUE.

SIR,—I am interested in para. 328 of the *Epitome* of October 11th, and also in the letter of Dr. John R. Gillespie, which appeared in the *Journal* of October 25th (p. 710). Lingual tuberculosis appears nowadays to be comparatively rare, and the following case may therefore be of some interest.

When the patient first came under my observation in hospital he had signs of extensive involvement of the lungs. It was reported that he had had "pleurisy" about three months before, and, thereafter, a troublesome cough and purulent expectoration. The voice was weak, and examination of the larynx showed slight ulceration of the right vocal cord. Investigation of the chest revealed extensive disease in the left lung, with dry pleurisy in the lower part of the left side of the chest; there was also slight involvement of the right upper lobe. Tubercle bacilli were present in the sputum. Pain in the left side of the mouth was rapidly followed by the onset of ulceration on the under surface of the tongue; within a few weeks it had extended from the anterior pillar of the fauces along the left side of the base of the tongue, reaching nearly to the fraenum. The base of the ulcer showed some induration, and the surface was covered by greyish granulations. Slight oedema of the left cheek also developed, and was persistent. The Wassermann reaction was negative.

The patient's condition became worse. In attempts to relieve the pain in the tongue several different local applications, including orthoform and anaesthesin, were tried, but little benefit resulted. Resort had ultimately to be made to morphine. Tuberculin therapy was deemed inadvisable owing to the extent and activity of the disease in the lungs. After remaining in hospital for two months the patient went home, and died there three weeks later.

It would be interesting to know how many of these cases of lingual tuberculosis are associated also with infiltration or ulceration of the larynx.—I am, etc.,

Rotherham, Oct. 28th. E. ASHWORTH UNDERWOOD.

SIR,—The recent observations in the *British Medical Journal* regarding lingual tuberculosis have interested me. In an experience of tuberculosis lasting hardly as many months as your correspondent, Dr. J. R. Gillespie, has years of service, I have seen two cases of tuberculosis of the tongue.

The first was in a man, aged 53, who had an ulcer removed in April, 1929. This, on examination, was found to be tuberculous, and he was referred to the tuberculosis dispensary. He showed involvement of the right upper lobe and left apex, and was sent to a sanatorium, where, however, he stayed only a limited time, and made moderate improvement. Later, the tongue showed a deep fissure at the tip to the left of the middle line and two superficial ulcerations on either side of the fissure. The condition was very painful at the beginning, and the sense of taste was lost. He is now having *x*-ray treatment, and some improvement can be seen. The ulcers look clean and healthy, there is no induration, the pain has been relieved, although the sense of taste is still lacking, and slight closing-in of the edges is noted.

The second case came to my notice two weeks ago. This also was in a man, aged 42. There is extensive and active disease in both lungs, with a positive sputum. The larynx is also affected, and there is an elongated deep ulcer of the left side of the dorsum of the tongue. The edges are irregular, there is no induration, and no associated pain or loss of taste. His general condition is extremely poor, and the prognosis is certainly bad.

—I am, etc.,

Maltby, Rotherham, Oct. 31st. WILLIAM LEE, M.B.

ABDOMINAL EMERGENCIES WHEN FLYING.

SIR,—I was much interested in the report of Surgeon Commander Twigg in your issue of October 25th (p. 687) on a case of perforation of duodenal ulcer when flying. Commander Twigg postulates this as the first recorded case of an abdominal emergency when flying. I should like to state, however, that in 1910 an airman was admitted to the Cambridge Hospital, Aldershot, immediately after landing from what was then considered a long flight from the West of England. He had acute abdominal symptoms, and I removed his appendix, which had perforated, under spinal analgesia. He made an uneventful recovery, and has since become famous. His case was recorded at the time in my annual report as surgical specialist to the Aldershot Command, and was subsequently incorporated in a series of 400 cases of operation under spinal analgesia reported in the *Journal of the Royal Army Medical Corps* for January, 1913.—I am, etc.,

Cheltenham, Nov. 2nd. J. W. H. HOUGHTON, Colonel, late R.A.M.C. (ret.).

"TONSILS AND ADENOIDS."

SIR,—Your leading article under this heading (November 1st) is liable to misinterpretation; there would be no so-called "problem of tonsils and adenoids" if the subject were dealt with on general surgical principles. In any given case, if the palatine and pharyngeal tonsils are sites of chronic sepsis, they should be removed; if not, the question of operation does not arise. But to leave focal sepsis untreated on the plea of juvenility is unpardonable.—I am, etc.,

Hove, Nov. 2nd. T. S. ALLEN.

[1] *Lancet*, May 18th, 1918, p. 699.
[2] Crookshank: *Epidemiological Essays*, Kegan Paul, 1930.
[3] *Journ. Exper. Path.*, 1923-24, iii.

PHYSIOLOGICAL RESEARCH AND CLINICAL MEDICINE.

Sir,—In an address published in the *Journal* of October 11th (p. 612) Lord Moynihan asserts, quite fairly, that physiology has a true mission "to elucidate the problem of the normal function of man's organs." Of course, it has a still wider range, in both the animal and the vegetable kingdoms, but the real point at issue is that chairs of physiology in this country were largely founded as an integral portion of a medical faculty; the older title of some of these chairs was "institutes of medicine." Since physiology professorships are held in some cases apparently by men who have no interest in the problem of the normal function of man's organs, Lord Moynihan is quite correct in saying "it is time to consider whether we should not now seek to establish chairs in hominal physiology." But Lord Moynihan must surely explain, when these chairs of hominal physiology are created, how hominal physiologists will be elected to them. Will the pious founders of hominal physiology chairs be willing to envisage a conversion of their trust; and what safeguards has Lord Moynihan to suggest? Without them physiology chairs may be founded *ad infinitum* without securing his purpose.—I am, etc.,

Birmingham, Nov. 2nd. JAMES M. McQUEEN.

KOCH AS CLINICIAN.

Sir,—It would be difficult to find a more flagrant example of the *argumentum ad hominem* than that reported in your issue of November 1st (p. 734) as having been made by Sir Almroth Wright at a meeting of the Medical Society of London on October 27th, when a remark about Koch led him to observe that "Koch was a very great man, but about the worst clinician—the worst doctor—it was possible to conceive."

It is not for the honour or credit of British medicine that this remark should pass unchallenged. Anyone who knows intimately the history of Koch's work on tuberculosis, and especially anyone who has attempted to follow the gradual development of the subject in his mind as the successive points unfolded themselves, must feel the most profound admiration for the scientific imagination, inductive reasoning, clinical ability, and matchless endurance and tenacity compressed within the genius of the greatest of all general practitioners. These qualities are surely the basic qualities of the best conceivable doctors and clinicians. It seems probable that Sir Almroth Wright has sacrificed the canons of scientific criticism, on a subject in which he is keenly interested, for a misleading and damaging epigram.—I am, etc.,

London, S.W., Nov. 2nd. ROBERT CARSWELL.

MEDICAL REGISTER.

Sir,—I desire to remind registered medical practitioners that if they wish to have a new address entered in the forthcoming *Medical Register* they should communicate with me without delay. I should also like to take the opportunity of pointing out that the *Medical Register* is the statutory publication. It is the appearance of a name in this book alone which makes a practitioner legally qualified, and it should not be confused with other books of a similar nature, which are purely private publications.—I am, etc.,

44, Hallam Street, Portland Place, W.1, Nov. 4th. NORMAN C. KING, Registrar, General Council of Medical Education and Registration of the United Kingdom.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on November 1st the following medical degrees were conferred:

M.B., B.Chir.—J. H. Gibbens, G. J. Gross, W. R. F. Wood.
M.B.—H. J. Heathcote.

UNIVERSITY OF LONDON.

Professor G. E. Gask, C.M.G., D.S.O., has been elected Dean of the Faculty of Medicine.

NATIONAL UNIVERSITY OF IRELAND.

The Senate at its meeting on October 30th considered the reports of the examiners upon the results of the autumn examinations and awarded passes, honours, etc., in connexion therewith.

The following awards were made: Travelling studentship in anatomy, E. C. Amoroso. Dr. Henry Hutchinson Stewart Medical Scholarships: anatomy, M. F. Headon; physiology, E. Isaacson.

Dr. W. M. Crofton was reappointed lecturer in special pathology at University College, Dublin.

The Senate decided that the Dr. Henry Hutchinson Stewart Scholarships in arts, in medicine, and in mental and nervous diseases, should be offered for competition in 1931.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A quarterly comitia of the Royal College of Physicians of London was held on October 30th, when the President, Sir John Rose Bradford, was in the chair.

Membership.

The following candidates, having satisfied the Censor's Board, were admitted to the Membership of the College:

Joges Chandra Banerjea, M.B.Calcutta, L.R.C.P., John Robert Blazé, M.D.Lond., Harold Ernest Brown, M.B.Toronto, Alfred Bramwell Cook, M.B.New Zeal., Charles Clifford Davis, M.B.Lond., L.R.C.P., Percival Cholmondeley Chalmers de Silva, M.B.Lond., L.R.C.P., Doris Louise Durie, M.B.Lond., L.R.C.P., Horace Evans, M.B.Lond., L.R.C.P., Raymond Eustace Ford, M.D.Lond., Traugott Ernest Gumpert, M.B.Sheffield, Francis Findlay Hellier, M.B.Lond., L.R.C.P., Harold Percival Himsworth, M.B.Lond., L.R.C.P., Mohamed Ahmed Ibrahim, M.B.Cairo, Louis Philippe Eugène Laurent, M.B.Lond., L.R.C.P., John Neil Leitch, M.D.Lond., L.R.C.P., Robert Alexander McCance, M.D.Camb., L.R.C.P., Owen Reginald McEwen, L.R.C.P., George Osborne Mitchell, M.B.Lond., L.R.C.P., John Henry Mulvany, L.R.C.P., Thomas Saint Martin Norris, M.B.Camb., L.R.C.P., James Vincent O'Sullivan, M.D.N.U.Irel., L.R.C.P., Trevor Kingsley Owen, M.B.Sheffield, James William Reid, M.D.Dalhousie, Thomas Robson, M.D.Lond., L.R.C.P., Harold Edmund Rykert, M.B.Toronto, Baldev Singh, M.B.Punjab, William Wood, M.D.Aberdeen.

Appointments.

Sir Thomas Horder, Dr. Comyns Berkeley, Sir William Willcox, Dr. A. G. Gibson, Dr. M. A. Cassidy, and Dr. Carey Coombs were elected Councillors. Dr. Comyns Berkeley was appointed representative of the College on the Central Midwives Board. Dr. R. A. Young was re-elected a member of the Committee of Management of the Conjoint Board, and Dr. J. A. Nixon a representative on the Court of the University of Bristol.

The President announced that Professor C. C. Okell had been appointed by the Council to be Milroy lecturer for 1932, and that the Jenks Memorial Scholarship for 1930 had been awarded to Frederick Basil Kiernander, until lately of Epsom College.

Licences.

Licences to practise were conferred on the following 153 candidates:

E. F. Adams, G. L. Alcock, R. M. Alderton, G. H. H. Ames, M. Baillie, G. Balasuriya, N. B. Bapat, C. O. Barnes, C. R. G. Barrington, J. H. Bartlett, A. K. Basu, D. S. Bateman, J. H. Beilby, H. H. W. Bennett, J. N. Bhada, Ilma B. S. Bingemann, A. T. Blair, D. A. S. Blair, W. V. D. Bolt, O. H. Bostock, J. F. Brock, W. D. W. Brooks, P. Brown, J. Carlton, G. T. W. Cashell, D. N. Chatterji, H. T. Chilton, R. T. V. Clarke, A. F. Clift, E. C. Coaker, Adelina A. Collins, W. D. Coltart, L. C. Crane, F. J. H. Crawford, K. K. Dalal, A. F. Davy, P. T. L. Day, C. A. V. De Candole, V. M. Dellal, *Achanta L. Devi, S. B. Dimson, G. W. Duncan, D. Durbach, E. C. Dymond, W. S. Dyson, M. Ellis, D. G. Evans, Monica M. M. Fisher, E. C. I. Foot, H. W. F. Freeth, G. O. Gauld, Kamala Ghosh, Helen G. Gifford, A. H. Grace, G. J. Griffiths, L. H. Griffiths, J. H. Hall, Marjorie K. Hall, E. O. Halliwell, F. R. T. Hancock, J. O. Harrison, Lettice P. Harrison, Carrie I. Hearn, J. E. R. Heppolette, A. R. C. Higham, W. Hogg, U. M. Hopkins, B. Horwitz, *H. R. Hovsha, H. W. Howell, A. D. H. Hugo, B. Isaac, L. Jacobson, E. N. Jenkinson, W. J. Johnson, A. Jokl, C. J. King-Turner, G. C. Knight, F. S. Krusin, D. H. Le Good, *A. H. Lendon, E. Lethem, L. C. Lodge, J. Loofe, S. H. Lubner, P. H. Maal, J. E. S. MacDonald, Henrietta M. MacLeod, J. D. McVean, F. G. Maitland, Dorothy Makepeace, G. R. Malkin, J. T. Mani, J. B. Marshall, F. Mattar, A. F. Merchant, Barbara A. Merlin, T. W. Mimpriss, D. C. Mintzman, H. S. Morton, C. G. Muller, *D. K. Mulvany, Bachoobai B. Nanavatty, Gladys L. Neill, P. W. Parkes, M. A. Parthasarathy, R. O. Payne, J. H. Peel, H. J. Powell, D. L. Pugh, Louise Rees, V. H. Riddell, S. L. Rikhye, Anna L. M. E. Ringdahl, M. A. Robertson, M. W. Robinson, A. W. M. Rooke, S. Ryman, Esther Samuel, W. W. Sargant, S. Schenkman, J. B. Schofield, Margaret W. Schreiber, J. Secker, Ester C. Seifert, C. K. Simpson, M. Singh, T. Singh, E. H. P. Smith, S. Smith, R. H. B. Snow, N. Solomon, Cecilia M. Susai, R. S. Taylor, J. W. P. Thompson, G. M. Tickler, G. E. M. Turner, A. W. Vaiser, C. K. Vartan, Mangladevi G. Vatsalya, C. Verity, C. Wall, H. Walton, J. G. Warren, S. I. Weinstein, Mary J. Westall, A. M. Weston, K. L. Wig, A. B. Williamson, H. W. Williamson, C. Wright, F. J. Wright, C. H. Wrigley.

* M.R.C.S. previously granted.

Diplomas.

The following diplomas were also conferred, jointly with the Royal College of Surgeons:

D.P.H.—M. Ahern, M. Ata Ullah, Balkrishna, C. L. Bhola, H. P. Chaudhuri, Annie E. Connan, A. M. Critchley, F. M. M. Eyton-Jones, V. Freeman, D. N. Ghosh, K. T. Hosain, D. R. Kajuria, R. G. Keays, B. S. Khurana, J. N. Leitch, J. C. H. Mackenzie, Mary M. Mackenzie, Y. B. Mangrulkar, A. H. Morley, P. Singh, W. H. S. Wallace, J. S. Westwater.

Gynaecology and Obstetrics.—Hilda M. Lazarus.

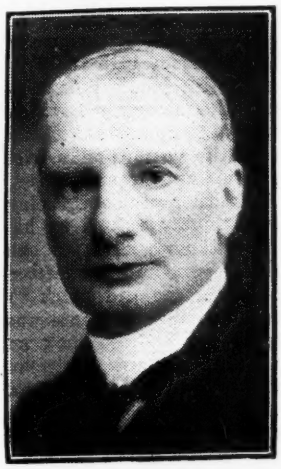
Obituary.

WALDEMAR HAFFKINE, C.I.E.,

Formerly Bacteriologist with the Government of India.

By the death of Professor Haffkine there has passed away, at the age of 70, a great scientist, whose researches enabled him to produce first a cholera and later a plague prophylactic vaccine which are now effectively used wherever there is an outbreak of cholera or plague. His name will always be associated with this great achievement.

The history of the cholera prophylactic takes us back to Professor Koch's discovery in Egypt in 1883, when he found comma bacilli in the intestines of patients who had died of cholera, and in the rice-water stools of patients suffering from cholera. Like all new discoveries, it was received with suspicion, even after his visit to Calcutta, where he found in the patients suffering from cholera the same micro-organisms. It was not until he returned to Germany and an accident occurred in Professor Koch's laboratory in Berlin, where a doctor engaged in cultivating the comma bacilli developed an attack of cholera, and his discharges were found to contain comma bacilli, although no cholera existed in Germany at that time, that Professor Koch's discovery began to gain some support. Dr. Roux, who had been on the French Commission in Egypt in 1883, but owing to the decline of cholera had few opportunities of investigating the role of the comma bacillus, and was somewhat sceptical as to its importance, had the advantage of working with Professor Koch in the epidemic of cholera in Toulon, in France, on the part played by the comma bacillus as the causal agent. That investigation satisfied Dr. Roux that the comma bacillus was the causal agent of cholera, and since then it has always been acknowledged at the Pasteur Institute as being its real infective cause. The Pasteur Institute at that time made a special study of the preparation of vaccines and their application as prophylactics. This was due to Pasteur's discovery of vaccines against chicken cholera and against anthrax, a fatal disease affecting the cattle of France, and later a vaccine against rabies. An immense impetus was given to this line of research by Pasteur's great experimental demonstration of the value of his vaccine against anthrax at Pouilly-le-Fort, when before a gathering of scientists, landlords, agriculturists, and medical men, out of 60 head of cattle he set aside 10, inoculated 25 with his anthrax vaccine, and left 25 uninoculated. Then he inoculated the 50 cattle with a malignant culture of anthrax, with the result that the 25 uninoculated died, while the 25 inoculated remained as healthy as the 10 that had been untouched.



It was in an atmosphere such as this that Haffkine as a young man began his researches to discover a method by which a vaccine could be prepared that would protect the body against the poison elaborated by the comma bacillus. In nature the virus of infectious diseases such as small-pox and malaria is extremely variable, causing at one time a mild and at other times an extremely virulent disease. In small-pox inoculations the virus which was obtained from the natural disease did not always give the same results. Sometimes a mild small-pox was produced and sometimes a dangerous kind. The method was abandoned when Jenner discovered a fixed vaccine in the vesicle produced on the cow.

The problem which therefore had to be solved in the preparation of a vaccine against cholera was to find the means of fixing the virus in a well-defined strength. Haffkine solved this problem. He discovered the means of engrafting the cholera microbe on animals and cultivating it indefinitely on such animals. This gave him his vaccine. At the same time he was able to increase the cholera microbe in strength which produced, with certainty, a specific infectious disease in animals, and against which he was able to protect them. By this double discovery Haffkine, in addition to obtaining his vaccine, was able to demonstrate with the comma bacillus, as conclusively as Pasteur had done at the great demonstration at Pouilly-le-Fort, that he possessed a vaccine which would protect animals against a fatal disease caused by the cholera bacillus. The harmlessness of the vaccine was established by very careful and patient observations on medical men and scientists who were inoculated after the discovery. That was the first stage of Haffkine's research.

The next stage was to test the value of anticholera vaccination on human beings, by observing its effect on communities where cholera existed in an endemic or epidemic form. Lord Dufferin, who was Ambassador in Paris and who had been Viceroy of India, was approached on the possibility of Professor Haffkine visiting India for this purpose. Lord Dufferin took a great interest in the matter, and wrote to the Secretary of State for India and to Lord Lansdowne. With several letters of introduction Haffkine visited London, and availed himself of the opportunity of explaining his system to the leaders of the medical profession. His reception was of a most cordial nature. The English Government, through the Secretary of State for India, granted facilities for Haffkine to visit every part of India. I was home on leave at the time, and was asked by the Medical Department of the Local Government Board to give him every assistance possible when he was in Calcutta. Haffkine arrived in Calcutta in March, 1893, and after teaching my laboratory assistants the method of preparing the vaccines, as cholera was not very prevalent in Calcutta, he accepted an invitation to Agra, where Hankin, the Government bacteriologist, was anxious he should begin inoculations. In Agra 900 persons were inoculated. Once the inoculations were begun invitations from different places in Northern India came in so rapidly that Haffkine was unable to accept them all. Nevertheless, in the course of a year he inoculated about 25,000 persons. They were, however, too scattered, except in a few places such as Cawnpore, Dinapore, Lucknow, and Gya, to allow of any careful observations as to their value. It was nevertheless noted in Lucknow, where a specially malignant cholera prevailed, that, among the East Lancashire and Royal Irish Regiments, who were attacked fourteen months after the inoculations, the mortality, though lower among the inoculated, was much smaller than elsewhere. This was attributed to the fact that Lucknow, after Agra, was one of the first places in which inoculations were carried out, and they were done with great caution, with only small doses, between one-third and one-half, which were found later to be insufficient for full protection. Some months before the epidemic in Lucknow occurred it was decided that to obtain a thorough test it was better to concentrate at first as much as possible on Calcutta, which contained a good bacteriological laboratory, and assistants of mine who had been taught by Haffkine the method of preparing the cholera vaccine and the technique of the inoculations, and who had prepared a quantity of the vaccine used up-country. As soon, therefore, as the cholera season began in 1894, Haffkine came down to Calcutta, and, with the assistance of Dr. Chowdry, Dr. Ghose, Dr. Chatterjee, and Dr. Dutt, all able and reliable young men, whom I placed at his disposal, the work began. The result of two years' inoculation and investigation showed that, notwithstanding the incomplete protective effect of the first four days, and the gradual disappearance of the resistance in those inoculated with a weak dose of vaccine, which a large number of the inoculated people received during the first six months, the mortality among the inoculated compared with that of the uninoculated gave a reduction of over 72 per cent.; or, in other words, in houses where inoculations were performed, and which were subsequently visited with cholera, there occurred for every eleven deaths among the non-inoculated three deaths among a similar number of inoculated. This ratio improved later to a reduction of 80 per cent.

In addition to the evidence drawn from direct observation on man in epidemics of cholera proving the efficacy of the inoculation, an interesting set of experiments, carried out by Professor Koch, Professor Pfeiffer, and Dr. Kolle in 1896, enabled them to prove in another way that the inoculations were protective. They inoculated with Haffkine's vaccine a large number of students and doctors, and they found the serum of the inoculated had a rapid and absolutely destructive effect on the comma bacillus, exceeding in this respect by 200 times the power of the serum of ordinary individuals.

Turning to Haffkine's work on his plague prophylactic, we note that he was fortunately in Bombay when the plague appeared in that city. He was not altogether satisfied with his cholera vaccine, for he found that when an inoculated person was attacked with cholera the vaccine appeared to have little influence in preventing death. The problem before him was therefore to prepare a vaccine for plague which should have the double effect—namely, to preserve the inoculated person from an attack; and, if in certain circumstances this failed, to secure, if possible, that the attack should be a mild one. This he endeavoured to obtain by preparing the plague vaccine differently from that of his cholera vaccine. In a paper read before the Royal Society of Medicine in January, 1908, he gives the salient points of a ten years' experience of antiplague inoculations in India as follows: (1) It reduces the liability to attack to less than one-third of what it is among the non-inoculated. (2) In the one-third of cases there is a reduction of the plague mortality by some 85 per cent. of what it is in the non-inoculated Indians. (3) That in an inoculated European an attack of plague, if it subsequently occurs, has so far always ended in recovery. (4) That the inoculation is applicable to persons already infected and incubating the plague, and prevents the appearance of symptoms or else mitigates the attack—a fact which disclosed the basis for the bacteriological treatment of the disease. (5) That in natives of India the degree of immunity conferred by inoculation, though gradually diminishing, seems to last during several outbreaks of plague. (6) In Europeans the effect has not yet been seen to disappear in the space of time since 1897 that this inoculation has been under study.

Such is a brief sketch of the work of Haffkine. I knew him intimately. He stayed with us several times when in Calcutta, and on one occasion when he was ill with malaria, which he had contracted in Assam. Whether ill or well, he was very likeable and always the same: a courteous and amiable gentleman, even towards those who opposed him and attacked his views and work; very determined, remarkable for his powers of work, full of enthusiasm, and with a dauntless courage which was not to be damped by disappointments. He had the supreme satisfaction before he left India of placing on a firm basis his anticholera and antiplague prophylactic. We are proud to have elected him an Honorary Fellow of the Ross Institute, and to have his portrait in the library. Ross and Haffkine are two outstanding figures in the beneficent work they have done for India, and the saving of lives from malaria, cholera, and plague in different parts of the world.

W. J. SIMPSON.

[The photograph reproduced is by Elliott and Fry.]

HUGH DICKIE, M.A., M.D.,

Chairman, Northumberland Panel Committee.

THE death of Dr. Hugh Dickie, on October 22nd, after only two days' illness, has deprived Northumberland of one of its senior and best-known practitioners. He received his medical education in the University of Glasgow, where he graduated M.B., C.M. in 1887, and proceeded M.D. in 1896. He went to Morpeth forty-two years ago as assistant to the late Dr. William Clarkson, whose practice he subsequently took over. In 1889 he was appointed medical officer of health for the borough, and continued these duties until his death, paying particular attention to the problem of slum areas. For very many years he was medical officer to the Poor Law institution and to the parish of Morpeth, a public vaccinator, and referee and examiner for several large insurance companies. He was chairman of the Northumberland panel committee, and a member of the county insurance committee. A cause with which he had identified himself of late was the establishment of a new cottage hospital, and he himself raised a substantial sum of money for the provision of special equipment for it when erected. A week before his death he attended a meeting of the building committee and learned that arrangements were being made for the purchase of the ground on which the hospital is to be built. He was an active Freemason, and a past-master and director of ceremonies of the De Ogle and the Morpeth Lodges, being one of the founders of the last-named. He was also a P.P.G.D. of the province of Northumberland, a member of the De Percy Chapter, and also of the Morpeth Lodge of Mark Master Masons. He was the first Master of the Coquetdale Lodge, Rothbury, and one of its founders; at the time of his death he was I.P.M. For many years he was surgeon captain in the Morpeth Company of the 1st Volunteer Battalion of the Northumberland Fusiliers, and he held a temporary commission as major in the R.A.M.C. from 1915 to 1919. Always a zealous supporter of the British Medical Association, Dr. Dickie was chairman of the Morpeth Division from 1922 to 1923, and a regular attendant at all its meetings. He proved a stalwart in the various industrial struggles with regard to medical levies and other matters, while his advice in local ethical and other problems, being always sensible and temperate, was highly valued by his colleagues. He loved all kinds of outdoor sports; at one time he was a keen lawn tennis player, and a member of the first club formed in the town. He did much to encourage cricket locally and for a number of years was president of the Morpeth cricket club; he also took an active part in hockey and badminton. He was chairman of the committee of the Morpeth Amateur Dramatic and Operatic Society, and left no stone unturned to make its performances successful. A great admirer of Burns, and an enthusiastic supporter of the Morpeth Burns Club, he had on many occasions the privilege of proposing the toast to the "Immortal Memory." At the funeral on October 24th about forty medical practitioners were present, representing almost every district between the Tyne and the Tweed.

Dr. R. A. WELSH writes:

The panel practitioners of Northumberland would like to put on record in the pages of the *Journal* an appreciation of what the late Dr. Hugh Dickie did for them, and also of the affection and high regard they had for him. He was chairman of the Panel Committee from the time of the inception of the Insurance Act till his death, except for a period during the war, when he was on military service. As a chairman he was *facile princeps*. He had a marvellous way with him; he knew when to pull up and to bring to heel an unruly colleague, but he did it with a smile and a humorous remark, without hurting his feelings. He knew when a discussion had gone on long enough; though he did not hustle, he wasted no time. He practised the *suaviter in modo* with the *fortiter in re* to perfection. He was a many-sided man—a man with wide interests, thorough in all his undertakings, and a warm-hearted and loyal friend. He was widely read both in English and in classical literature. He met his friends and colleagues with a genial smile and a pleasant remark, but he had "an eye like Mars, to threaten and command."

The writer has known him forty years, and has often benefited by his clear vision and sound common sense. The work he did for the insurance practitioners in Northumberland can never be told. Every type of doctor, be he town or country, had his interests jealously guarded by Dr. Dickie. During our fight for an adequate mileage grant in 1914–16, it was his idea to have a large-scale map of the county prepared—some twenty-five square feet of canvas—showing every footpath, stream, and hamlet. I was with him on a deputation to the Insurance Commissioners in London, and he took the map—the Whitehall officials had never seen such a map, the room was hardly big enough to display it—and I remember Dickie explaining to them that "while Old Gaul was divided into three parts, Northumberland was divided into two—a large industrial

part and a much larger rural one." That map and Dickie's speech on the matter had the most happy results, financially. He had a wonderful sense of humour and a charming personality.

His funeral was attended by about fifty of his medical colleagues from all parts of the county and Newcastle-on-Tyne. There was ample proof of the esteem and regard in which he was held. All business was suspended, all shops closed, and flags were at half-mast in the town of his adoption. The streets were lined with all kinds of people, even the poorest of the poor, for he was kind and good to these in his time, and when we laid him in the earth we might have said of him, as Mark Antony said of the dead Brutus:

> "His life was gentle; and the elements
> So mixed in him, that Nature might stand up,
> And say to all the world, 'This was a man!'"

His passing, so tragic in its suddenness, has been a great shock to us, for he had been our guide, philosopher, and friend. "We shall not look upon his like again."

Medico-Legal.

OFFENCE AGAINST DANGEROUS DRUGS REGULATIONS: £50 FINE.

At Ealing police court, on October 29th, Dr. Alfred Hugh Bell of Hanwell was fined £25 on each of two summonses charging him with having failed to enter in a register or daybook particulars of quantities of cocaine hydrochloride, contrary to the Dangerous Drugs Consolidation Regulations, 1928. He was also required to pay three guineas costs.

Mr. Vincent Evans, on behalf of the Director of Public Prosecutions, stated that the transactions which led to the charge were two purchases, from different chemists, in May and July last, one of 12 grains of the drug, and the other of 20 grains, on national health insurance prescriptions, which Dr. Bell himself took to the chemists. It was alleged that neither of the insured patients in respect to whom the prescriptions were made out had received medicine containing the drug from him. One of these patients, in evidence, said that Dr. Bell had from time to time given him prescriptions which he had taken to the chemist, but he had not been supplied by Dr. Bell directly with medicine for the last two years. Last July, however, the doctor gave him a lamp in which to burn oil to produce a vapour for inhaling; he obtained the oil from the chemist. The other patient stated that she had had prescriptions from time to time, but no treatment direct. One of the chemists testified that the first patient had been to his shop with prescriptions from Dr. Bell for menthol with oil. It was not usual for doctors to call and take away drugs themselves, though they occasionally did so. Dr. Bell had handed in a prescription for 12 grains of cocaine alkaloid made out in the name of an insured patient, and had himself taken away the drug. Occasionally Dr. Bell had given him orders for cocaine direct, and supplies were given him on ten occasions. Dr. Bell had told him that he did not want his patients to know that they were taking cocaine. The other chemist also stated that he had supplied Dr. Bell with cocaine from time to time on his order. He, too, had been told by Dr. Bell that he did not want his patients to know that he was prescribing cocaine. He understood that Dr. Bell was interested in a special treatment for bronchial troubles, and it was quite feasible that he would want a considerable quantity of cocaine for that purpose.

A detective-sergeant stated that, on requesting Dr. Bell to produce his dangerous drugs register, daybook, or reference book, he replied that he had none of these, and had not obtained drugs from wholesalers since 1914, when he gave up dispensing. He stated that he got cocaine and other drugs for his patients on signed orders at chemists, sometimes on national health insurance prescription forms. He obtained the drugs personally in this way so that he might incorporate the drug in a special treatment he was giving them for bronchitis and asthma.

Dr. Bell, in evidence, said that he had been a medical practitioner for nearly thirty years. Four or five years ago he became interested in a special Continental treatment which involved the use of cocaine, and this he obtained personally from the chemists, because he did not wish his patients to know he was using the drug. The supplies were obtained on written orders, and national insurance scrip was used in some instances, because the patients were insured persons on his list. He stated that the first of the patients who had given evidence had had oil as well as a lamp from him, and that the other had been given inhalations, though she had been ill and worried, and had probably forgotten all about it. The witness added that he had not thought it necessary to keep registers.

The chairman of the Bench (Mr. Basil Holmes), in imposing the fine, said that the Bench was of opinion that a serious offence had been committed.

Two other summonses, for being in unlawful possession of 10 grains of cocaine hydrochloride, and 12 grains of cocaine alkaloid, on certain dates, were dismissed.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

The debate on the Address in the House of Commons closed on Tuesday, when a Conservative amendment was defeated by 281 to 250. The second reading of the Government's bill for raising the age of compulsory attendance at school was set down for Thursday.

Maternity.

In reply to Sir Basil Peto, on October 30th, the Minister of Health, Mr. Greenwood, said that his first step to carry into effect the interim report of the departmental committee for the improvement of accommodation and treatment of women in childbirth would be to communicate with local authorities in regard to certain recommendations in the report. In cases of tuberculous patients, he understood that special arrangements for confinement were not usually made in tuberculosis sanatoriums. It was generally preferable to transfer pregnant women from sanatoriums to maternity homes for the confinement and then to readmit them subsequently to a sanatorium. Asked by Sir Basil Peto to bear in mind the inadvisability of moving such cases from pillar to post, Mr. Greenwood said he was on the point of issuing a circular to local authorities on the whole field and the provisions that could be made. Mr. Greenwood told Mr. Morris that he proposed to communicate with local authorities concerning certain recommendations by the Maternal Mortality Committee, not all of which required legislation.

Mr. Greenwood, on October 30th, told Mr. Muggeridge that the number of midwives practising in a district was not the only consideration in deciding whether the council of the district should be the local supervising authority under the Midwives Acts.

Experimental Work on Poison Gas.

Mr. T. Shaw, replying to several members on November 3rd, said his attention had been drawn to statements that two thousand old horses had been handed over to the experimental station at Porton for experiments in poison gas and the cultivation of bacteria for spreading plague. The facts were that, during the period from 1921 to 1930, only 25 horses had been used for experiments at Porton in connexion with poison gas. No horse, nor other animal, had been used at Porton for experiments in plague bacteria cultivation. The experiments carried out were for preventive and curative treatment of horses affected by poison gases. Between October 31st, 1929, and October 31st, 1930, 729 animals had been used for experiments at Porton, and 366 were killed by the experiments. At the Physiological Laboratory at Cambridge, from January 1st, 1930, to October 31st last, 85 animals were used for experiments and all were killed. Officers holding vivisection licences for poison gas experiments at the War Department Establishment worked in strict conformity with the provisions of the Cruelty to Animals Act, 1876.

Animal Experiments.

Mr. Clynes, replying to Mr. Freeman on November 3rd, said that each holder of a vivisection licence was made responsible for seeing that any animal which was suffering pain that was either severe or likely to endure was at once killed if the main object of the experiment had been attained, and that any animal that was suffering pain, both severe and likely to endure, was at once killed in any case. The requirement was made a condition of the licence, and any infringement of it brought to his notice would be severely dealt with. The Home Office inspector informed him that he was satisfied that the condition was scrupulously observed by the holders of licences.

On November 4th Mr. Clynes told Sir R. Gower that it was not his intention to introduce a bill this session to make painful experiments on dogs illegal.

Bills.

Bills presented to the House of Commons on October 31st by private members include:

Hospitals (Relief from Rating) Bill, "to grant complete or partial relief from rates in the case of certain hereditaments

used for the purpose of hospitals, infirmaries, dispensaries, convalescent homes, nursing homes, sanatoria, and other similar uses or in connexion therewith," presented by Mr. Llewellyn-Jones; second reading, February 6th.

Slaughter of Animals Bill, "to provide for the humane and scientific slaughter of animals; and for purposes connected therewith," presented by Colonel Moore; second reading, December 12th.

Advertisements Regulation (Amendment) Bill, "to amend the law with respect to the regulation of advertisements," presented by Dr. Vernon Davies; second reading, December 5th.

On November 4th Mr. Benson presented a bill to provide for the abolition of corporal punishment.

Dental Benefit.

Mr. GREENWOOD told Mr. Freeman, on October 30th, that he did not contemplate any change in the administration of the national health insurance scheme to include dental treatment for all contributors. Approved societies with an aggregate membership exceeding 80 per cent. of the total insured population already provide dental treatment for their members as additional benefit.

Foot-and-Mouth Disease.—Dr. ADDISON informed Brigadier-General Brown, on November 3rd, that an outbreak of foot-and-mouth disease had occurred in connexion with which anti-foot-and-mouth serum had been used. The diseased animals, and those in immediate contact on the premises on which the outbreak occurred, were slaughtered, but cattle and pigs on neighbouring premises which had been exposed to infection received serum treatment. None of the animals so treated developed foot-and-mouth disease.

Pensions.—Mr. F. O. ROBERTS, replying on November 3rd to Captain Wallace, said that independent medical experts had been appointed to advise in a special type of late claim for disablement. He could not add any other specific class of case to the scope of their present duties.

Health of Bakers.—Replying to Mr. Thorne, on October 30th, Mr. CLYNES said that safeguards for the health of those engaged in the baking industry were at present regulated by the Bread Acts of 1822 and 1836, but enforcement was outside the power of the Home Office. He was willing to consider proposals for fresh legislation, but there was little prospect of time for a bill at present.

National Insurance.—Mr. Greenwood expects to make an early statement concerning the position of insured persons who, by prolonged unemployment, would cease at the end of the present year to be insurable under health insurance and contributory pension schemes.

Physique of Recruits.—Mr. T. SHAW, in reply to Major Glynn, said that from July 1st to September 30th, 1930, 10,447 men were served with notice papers for enlistment in the Foot Guards and infantry. Of this number, 6,506, or 62 per cent., were rejected on medical or physical grounds.

Medical News.

A GENERAL meeting of the Medical Officers of Schools Association will be held at 11, Chandos Street, W.1, to-day (Friday, November 7th) at 5 p.m. Mr. L. E. Barrington-Ward, surgeon to the Hospital for Children, Great Ormond Street, W.C., will read a paper on appendicitis, acute and chronic, in the schoolboy.

THE annual dinner of the Prince of Wales's Hospital Reunion Association will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Thursday, November, 27th, at 7.45 for 8 p.m., with Mr. W. E. Tanner, F.R.C.S., in the chair. Price of dinner (exclusive of wine) 12s. 6d.; no tickets will be issued. Members are asked to notify the secretary, Dr. Bruce Williamson, 137, Harley Street, W.1, of their intention to be present, stating number of guests.

THE West Riding Association of Graduates of the University of Edinburgh will hold their annual general meeting at 6.45 p.m. and dinner at 7.30 p.m., on Friday, November 21st, at the Great Northern Hotel, Leeds. Sir Norman Walker, M.D., is to be the guest of the evening. Any graduate requiring further information should apply to the honorary secretary, 33, Manor Row, Bradford.

THE annual clinical At Home at the Royal Dental Hospital, Leicester Square, W.C., will be held on Saturday, November 22nd, at 2 p.m. Cases of clinical interest illustrating the scope of the work of the hospital, especially the treatment of children and the young, will be shown. The various departments of the school will also be open for inspection. Tea will be provided at 4 p.m. The annual dinner of the past and present students will take place on the same day at the Trocadero Restaurant, Shaftesbury Avenue, W.1, at 7 p.m., when Dr. Harvey Hilliard will preside.

AT a meeting of the Hunterian Society in Cutlers' Hall, Warwick Lane, E.C., on Monday, November 17th, at 9 p.m., there will be a discussion on the place of the doctor in industry, in which Sir David Milne-Watson, Mr. W. A. Appleton, Professor E. L. Collis, and Dr. Strickland Goodall will take part.

THE fifty-fourth anniversary dinner of the Cambridge Graduates' Club of St. Bartholomew's Hospital will take place on Wednesday, November 19th, at 7.30 p.m., at the May Fair Hotel, with Mr. R. Foster Moore in the chair. The honorary secretaries are Dr. H. N. Burroughes and Mr. Reginald M. Vick.

A CONFERENCE on pollution of rivers and streams, arranged by the Royal Sanitary Institute, will be held at 90, Buckingham Palace Road, S.W.1, on Tuesday, November 18th. Professor A. Bostock Hill, M.D., will take the chair at 11 a.m.

A MEETING of the Illuminating Engineering Society will be held at the house of the Royal Society of Arts, John Street, Adelphi, W.C., on Friday, November 14th, at 6.30 p.m., when a paper on the lighting of offices and public buildings will be read by Mr. J. A. Macintyre (H.M. Office of Works).

A COURSE of three public lectures arranged by the National Institute of Industrial Psychology (under the Heath Clark bequest), on modern views of nervous troubles, is being given at the London School of Economics and Political Science, Houghton Street, W.C.2, by Dr. Millais Culpin, on Wednesdays, at 6 p.m. Admission to the lectures is free and without ticket.

THE Fellowship of Medicine announces that its M.R.C.P. course for this week comprises a lecture on November 11th entitled "Present views on renal disease," and another on November 14th, by Dr. T. Izod Bennett, on the relations of the colon and stomach in medicine; these lectures are delivered at the house of the Medical Society, 11, Chandos Street, Cavendish Square, at 8.30 p.m., and tickets, price 10s. 6d. each lecture, are obtainable at the lecture room. On Monday, November 10th, a free lecture, illustrated by lantern slides, will be given at the same place at 4 p.m. by Mr. H. P. Winsbury White on modern diagnostic methods in surgical diseases of the urinary tract. On the morning of November 12th, from 9.30 to 12.30, Mr. McKim McCullagh will give a free demonstration in gynaecology at the Samaritan Hospital for Women. An afternoon and evening course in venereal disease at the London Lock Hospital will continue until November 29th. From November 10th to 28th a course in medicine, surgery, and gynaecology will be held at the Royal Waterloo Hospital. From November 17th to December 13th, at 5 p.m., a series of lectures, illustrated by cases, will be delivered at the West End Hospital for Nervous Diseases, and an all-day course in diseases of the chest will be given at the Victoria Hospital for Diseases of the Heart and Lungs from November 17th to 29th. An all-day course in diseases of the rectum will be held at St. Mark's Hospital from November 24th to 29th. Copies of syllabuses and tickets of admission may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A SERIES of post-graduate clinics arranged by the University of Sheffield on the various manifestations of syphilis commenced at the Royal Infirmary, Sheffield, on October 24th, and will be continued on Fridays till December 12th, at 3.30 p.m. On November 14th Mr. Ferguson will discuss ocular manifestations of syphilis. The course is open free to medical practitioners.

THE tenth annual conference of the Society for the Health of Women and Children of Victoria was held on September 9th; addresses were contributed by the Minister of Health for the State, the medical officer of health for the city of Melbourne, Dr. Vera Scantlebury, Professor R. Marshall Allan, and Dr. J. W. Springthorpe, president of the society.

A MEETING of medical men interested in physiotherapeutics was held at the rooms of the Medical Society of London on October 24th, with Sir Leonard Hill in the chair, when a resolution to form a society of physiotherapy was adopted. Medical men and women specializing in any branch of physiotherapeutics who desire to attend the next meeting on Friday, November 14th, may apply for invitation cards to the acting honorary secretary, Dr. R. King Brown, 11, Featherstone Buildings, W.C.1.

THE new Turkish Baths provided by the Eastbourne Corporation in Carlisle Road are being opened to-day (Friday, November 7th) at noon by Dr. R. Fortescue Fox.

THE Minister of Health interviewed on October 30th representatives of several metropolitan Labour Parties and Trades Councils who had written to him on the subject of the imposition of test work as a condition of outdoor relief. After hearing the general points put to him he promised to consider carefully any specific cases submitted.

ON October 29th the National Medical Service Association met in London, with Mr. Somerville Hastings, M.P., in the chair, and discussed the British Medical Association's Proposals for a General Medical Service.

THE International Association for the Prevention of Blindness, which opened in Brussels on October 10th, received various national reports dealing particularly with the prevention of diseases and accidents which lead to destruction or impairment of sight.

THE annual meeting of the council of the British Red Cross Society was held on November 5th, under the presidency of the Duke of York, when the report was presented by Sir Arthur Stanley. In this attention is called to the continued success of the blood transfusion service, and also to the health lectures which have been organized throughout the country. It is hoped that a comprehensive scheme of co-operation of the various Red Cross clinics will be introduced soon. The work of voluntary aid detachments has been steadily increasing, and there is now a total of 722, 83 being composed of men and 639 of women; British Red Cross detachments number 205. The existing textbooks have been revised and new manuals have been issued, including one on first aid and chemical warfare.

THE hospital library of the British Red Cross Society and Order of St. John (48, Queen's Gardens, Lancaster Gate, W.2) now supplies over 2,000 hospitals of all kinds with books given by the public. Development of this work as a permanent national scheme can only be carried out, however, with the co-operation of hospitals and public libraries. In order to discuss this question a meeting will be held, at the invitation of the Public Health Congress, on Friday, November 21st, at 3 p.m., at the Royal Agricultural Hall, Islington, under the chairmanship of Sir Arthur Stanley. The speakers will include Mr. L. G. Brock, chairman of the Board of Control; Mr. H. L. Eason, M.S., superintendent of Guy's Hospital; Dr. Doris Odlum, of the National Council of Mental Hygiene; and Miss M. E. Sparshott, president of the College of Nursing.

THE Minister of Health received a deputation on October 30th from the British Social Hygiene Council. It was introduced by Mr. Somerville Hastings, M.P., F.R.C.S., and included Sir Basil Blackett, Professor F. J. Browne, Professor Bostock Hill, Mrs. Neville Rolfe, and Mr. E. B. Turner, F.R.C.S. The deputation urged the importance of further propaganda on the subject of venereal disease, and asked the Minister to issue a circular to local authorities pressing them to greater activity in this matter. The Minister undertook to consider carefully the suggestion made to him.

A GIFT of one million dollars has been made by Mr. George Eastman, owner of the Kodak factories in America, for the establishment of a large and modern dental clinic for the benefit of the school children of Stockholm up to the age of 16 years. The clinic is to be administered by the municipal authorities of Stockholm on the same lines as the corresponding institutes in Rochester (N.Y.), London, and Rome, established through similar generous donations by Mr. Eastman.

THE Health and Cleanliness Council (5, Tavistock Square, W.C.1) has had so many applications for publications dealing with verminous conditions that the Advisory Board has produced two leaflets on the subject. These leaflets will be supplied free of charge to medical officers of health, sanitary inspectors, health visitors, superintendents of infant welfare centres, and similar public health officials for use in connexion with their work.

THE Minister of Health has issued a memorandum—37/T (revised)—describing the amended forms of the annual reports to be furnished by the chief (administrative) tuberculosis officers of local authorities in respect of the year 1931 and subsequently. Simplification has been introduced as regards the reporting the work of tuberculosis dispensaries; it will now be possible to show more conveniently the results of the observations of doubtful cases, and the immediate results of the treatment of definite cases in residential institutions.

A REPORT of the proceedings of the conference on the administration of the Mental Treatment Act, 1930, convened by the Board of Control in July, has been published by H.M. Stationery Office, price 2s. The principal addresses and discussions at the conference were described in the *British Medical Journal* of August 2nd (p. 190).

TWO further series of eight brochures, Nos. 220 to 227 and 228 to 235, have been issued by the International Labour Office in connexion with its encyclopaedia, *Occupation and Health*. The brochures relate respectively to: pottery industry; feathers; file-cutting; fire-lighters (rosin); firemen; gardeners and market gardeners; glanders; hotels and restaurants; hydroxylamine; factory surgeons; fatty substances; first aid; fishermen; gases and fumes; gold; gold mines; and homework. They are obtainable from the London office of this organization, 12, Victoria Street, S.W.1.

AN appeal for generous subscriptions to maintain and extend the work of the British Dental Hospital is made in its annual report for 1929–30. Since the hospital was established in 1911 its threefold policy has been: (*a*) to establish centres for the treatment of persons unable to pay the ordinary charges of dental surgeons: (*b*) to educate the public in oral hygiene, and (*c*) to assist associations and public bodies to provide education and dental treatment. These services, the committee states, will have to be curtailed in the absence of increased public support. During the year skilled dental treatment at moderate cost was given at various hospital centres to patients who were not entitled to benefit under the National Health Insurance Acts. In addition, dental facilities were provided, in conjunction with a number of Metropolitan Borough Councils, for the treatment of expectant and nursing mothers and young children. At the Lewisham dental clinic over 5,000 attendances of children from the London County Council schools were reported during the year. This centre also carries out the inspection of school children suffering from ear and throat affections. The committee has continued to develop its welfare work in other directions, particularly in the treatment of adolescents at reduced fees. In this connexion proposals are being considered by which special arrangements will be made with firms and businesses for the dental treatment of their employees.

OF the last 6,000 inmates of Sing-Sing prison, 4,822 of whom were whites and 1,178 negroes, 1,061 gave a positive Wassermann reaction, in the proportion of 12 per cent. for whites and 41.9 per cent. for negroes.

DR. JUAN CARLOS NAVARRO, an eminent Argentine paediatrist, has been elected president of the Academy of Medicine of Buenos Aires.

PROFESSOR GUSTAVO PITTALUGA, director of the laboratory of parasitology at Madrid, has been nominated director of the Spanish National School of Hygiene.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

Stainless Steel Cooking Vessels.

"T. M.," having found objections alike to aluminium and to enamelled pans, will be glad to know, from anyone having had experience of them, whether cooking utensils made of stainless steel are entirely satisfactory from a health standpoint.

Angioneurotic Oedema.

"H. C. B." asks for advice in the treatment of a case of angioneurotic oedema occurring in a young married woman, the attacks having commenced since her marriage. Attempts have been made to detect a foreign protein in the food, but without avail, and there is no reason to suspect sensitization to semen. She has been treated with calcium, adrenaline, and ephedrine, the last of which has helped slightly. She is often unable to leave home, owing to the face and feet being the areas where the swellings occur. At present she has one swelling round each eye, and one in the lower lip, and one on the tongue is just disappearing. She has had two abortions; the Wassermann reaction is negative.

Climate of Madagascar.

"C. R." inquires about the suitability of Madagascar for a patient who has no disease, but is not robust.

*** The climate of Madagascar is very variable. There is much rain on the thickly wooded east coast, which is unhealthy. The west coast is drier, warmer, and has a smaller annual variation of temperature. The south-west suffers from drought. The climate of the high ground in the interior is generally mild, healthy, and suited to Europeans.

Constipation in a Child.

MR. PAUL BERNARD ROTH (London, W.) writes: In reply to "K. A.," who wants to know how to treat constipation in a child, I have never found abdominal massage fail to cure this condition in a fortnight.

DR. E. A. FREYWIRTH (London, W.C.) writes: In reply to "K. A.," the complaint is suggestive of congenital megacolon (Hirschsprung's disease), and I suggest an *x*-ray examination before doing anything else. The origin of the complaint from birth, with the relative absence of other complaints, makes me think of this somewhat rare condition. Has the child meteorismus, or distension of the abdomen?

Iodine in the Treatment of Exophthalmic Goitre.

MR. CECIL A. JOLL writes in answer to the query published on October 25th (p. 716): There are very real dangers in the persistent use of iodine in exophthalmic and other toxic goitres. The improvement which follows iodine medication is a temporary one, and, after a time, the symptoms reassert themselves with their former severity. Meanwhile the thyroid gland becomes harder, and pressure symptoms may become added. When this phase is reached further improvement by medical measures becomes almost impossible, and surgical intervention is rendered more hazardous. Iodine, in my opinion, should be given purely as a means to preparation for surgical treatment, and if the latter is not contemplated, it is much wiser to avoid this drug altogether.

Income Tax.

Post-Graduate Course.

"C. D. G." last year attended a post-graduate course on radium therapy, incurring certain hotel and travelling expenses. Can they be deducted for income tax purposes?

*** No. The expense of improving the means of earning income has to be regarded as capital outlay, and that principle applies to the improvement of professional knowledge or skill in the same way as it would to the improvement of the material equipment of a business or practice.

Cost of Upkeep of Instruments.

"J. A. A. R." inquires whether a deduction is allowed for wear and tear and depreciation of instruments, or whether only the cost of replacement is allowed.

*** It has to be remembered that in no case can depreciation be allowed and also the cost of replacement—the former represents the *anticipation* of the latter. The rules of Schedule D provide for the allowance of any sum expended . . . for the supply, repair, or alteration "of any implements, utensils, or articles employed for the purposes of the trade, profession . . . " etc. It is clear that the cost of replacement of such articles should be claimed, and therefore that depreciation is not allowable. This does not apply necessarily to large items of machinery or plant, including the car used professionally.

LETTERS, NOTES, ETC.

Addison's Disease.

ANY medical practitioner in charge of a severe case of Addison's disease is invited to communicate with the *Medical Registrar, London Hospital, Mile End, E.1*, with a view to trial treatment with a cortical extract.

Testimonial to Sir Ronald Ross.

WE printed on September 13th (p. 456) a list of donations received between May 1st and August 26th in response to the appeal on behalf of the Ross Award Fund. Further contributions have been received since then from, among others, Mrs. Berger, Ceylon per Mrs. Kindersley, Mrs. E. Robinson, and Dr. K. B. Shroff, Bombay, amounting in all to £217 9s. 1d. The total amount received up to October 31st was £14,329 7s. 7d. The following analysis of the Fund up to the end of October has been furnished by the honorary secretary:

	£	s.	d.
Home Fund	7,555	19	7
Singapore Straits Times	3,366	13	7
Government of India	2,000	0	0
Penang Gazette Press, Ltd.	654	0	0
Government of Rhodesia	262	10	0
Ceylon, per Mrs. Kindersley, Kandy	214	9	1
Government of Cyprus	200	0	0
Malayan Daily Express	75	15	4
	£14,329	7	7

Donations to the Fund should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15.

"All Liver and No Legs."

DR. HILL AITKEN (Rotherham) writes to say that, although formerly scornful of the above dictum on the motoring doctor, he was rapidly converted when he discovered that he himself was a sufferer. As a fortunate coincidence the self-starter of his car ceased to function, and the consequent efforts of using the starting handle in the old way were of much greater effect than a vigorous course of physical "jerks," restoring both liver and legs to normal function.

Schlatter's Disease.

WHAT is usually known in the English literature as Schlatter's disease was independently described twenty-seven years ago by Robert B. Osgood of Boston (*Boston Medical and Surgical Journal*, 1903, cxlviii, 114) and by Karl Schlatter of Zurich (*Beiträge für Klinischen Chirurgie*, 1903, xxxviii, 874), so that the eponym, "Osgood-Schlatter's disease," adopted by the *Quarterly Cumulative Index Medicus*, appeals to the historical mind. Both authors regarded trauma as the main etiological factor in the condition, and in a second paper (*Beiträge*, 1908, lix, 518) Schlatter again expressed his belief in the traumatic nature of his disease. He was careful to disown cases of complete separation of the epiphysis, a condition with which surgeons had been familiar in pre-Röntgen days (Poland: *Traumatic Separation of the Epiphyses*, London, 1898, p. 816). Knowledge of the natural history of the disease has advanced but little, and its position as a clinical entity has yet to be established. In an interesting paper in the *Archives Franco-Belges de Chirurgie* (1926, xxix, 119) M. van Neck records a case of Schlatter's disease affecting the patella. His hope that he had made an original discovery was shattered when he found that this condition had already been described in the Scandinavian literature by Sinding-Larsen and by Johansson. An article in the October number of *St. Bartholomew's Hospital Journal* entitled "Schlatter's disease before and after Schlatter: an eponymic note," quotes a passage on "enlargements of the tubercle of the tibia in young people much given to athletic games," from Sir James Paget's *Studies of Old Case-books*, which seems to show that Paget in 1891 was familiar with "Schlatter's disease" as we know it.

A Warning.

A CORRESPONDENT in Yorkshire, acting on the advice of the chief inspector of police, asks us to publish the following description of a man who is wanted on many charges in different counties, and appears to have made a habit of seeking advice from doctors without any intention of paying their fee: "Aged 48, heavily built, weighing about 16 st. Well dressed; usually stays in a good-class boarding house or small hotel. Goes under such names as 'A. Foster' and 'A. E. Brown'; almost always uses the initials 'A.' or 'A. E.' He usually complains of gout and seeks advice about a tophus, which has broken down and will not heal, in the soft tissues of the right heel. The margins of the ulcer are rounded and hard. Near this sore he has an old incision scar, where a previous tophus was removed. The fingers of both hands are much enlarged with gouty deposits." Any medical practitioner who is consulted by a man answering to this description should report at once to the local police.

Cleansing of the Chalice.

THE Rev. A. C. PURCHAS (Lyttleton, New Zealand) writes: In connexion with the correspondence in the *British Medical Journal* on the "Cleansing of the chalice," a doctor friend tells me that he always carries with him a small phial of brandy in which he cleanses his clinical thermometer, alcohol over 10 per cent. being deadly to all germs. That percentage, being present in Communion wine, should effectually destroy any possible germs that your correspondents so much dread. Is it not the fact also that clergymen, who have to consume whatever wine remains in the chalice, and should therefore be the recipients of all manner of germs, are, as a general rule, extremely healthy—a witness to the almost negligible danger from such a source?

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 45, 46, 47, 48, 49, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50, 51, and 52.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *211*.

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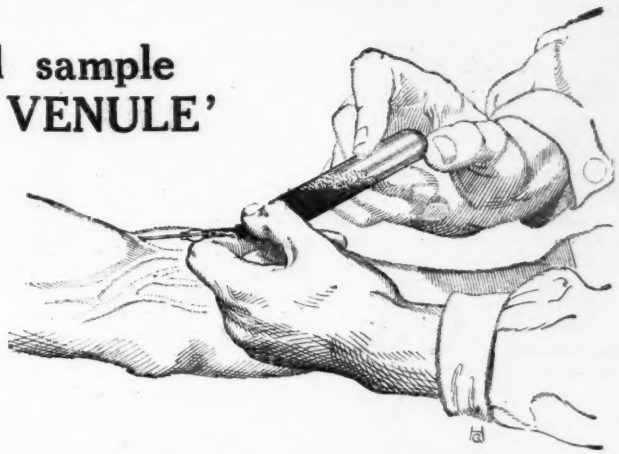

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